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AUDIO MEDIA

THE WORLD'S LEADING PROFESSIONAL AUDIO TECHNOLOGY MAGAZINE

Duro & Cores

In The Studio
With Professor Green

Special Supplement

Monitoring & Headphones

AUDIO-FOR-VIDEO • BROADCAST • INTERNET AUDIO • LIVE SOUND • MULTIMEDIA • POST PRODUCTION • RECORDING

THE INTERNATIONAL BUYER'S GUIDE

A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP

MONITORING & HEADPHONES 2012

PRODUCED BY AUDIO MEDIA

Games Compendium

Develop Special Issue

A NEWBAY MEDIA PUBLICATION

WORLDWIDE EDITION
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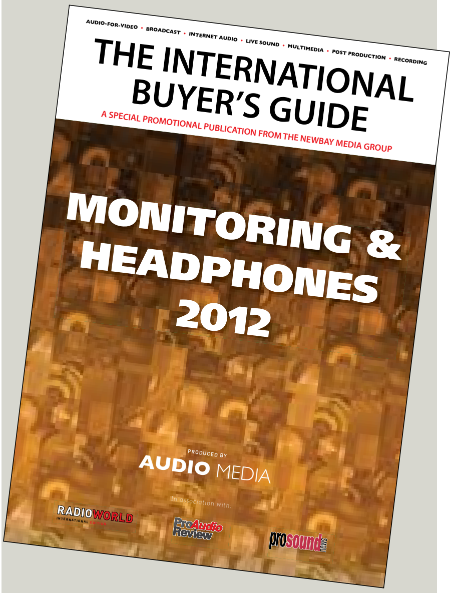
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leader

As great an event as it is, for a significant number of silent partners the Olympics is the elephant in the room. There are a few cunning ways of being allowed to mention 'Olympics' or London 2012 in press releases, marketing, and as a reference when courting business, but it's fraught with NDAs and agreements that are the opening obstacle even for tendering for business with the games. Service providers such as private OBs, rental, studios, and so on cannot say that they are proudly doing business with the biggest broadcast project around.

I can understand that the commercial concerns of the Games mean that, for instance, if enough money changes hands you can be the official anything to London 2012 and it probably costs quite a lot of money. Well, it has to be paid for.

However, a lot of small businesses have invested huge amounts of time and money in simply participating in a tender process. I think some level of disclosure for anybody who provides a commercial service to the games should be allowed, otherwise the host nation's small business infrastructure gets nothing over and above the low margins they have had to tolerate to win any business at all. I have even been sent a page from BBC *Good Food* magazine, pointing out a similar issue in that sector: "A number [of "smaller British food firms"] will supply Olympics caterers, but they won't be allowed to publicise the fact or display their branding. This is to ensure that spectators only see the branding of the official sponsors..."

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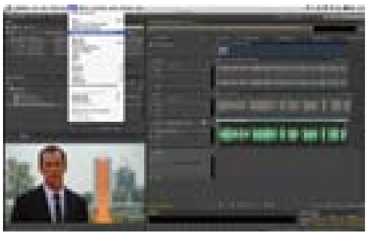
REVIEW
QSC KLA Series 52



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First we defined how a digital console should work.
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With 25 years experience designing the world's most popular digital consoles, it's fair to say that we've set the standards high in usability, performance and reliability. Now we're raising the bar for sound.

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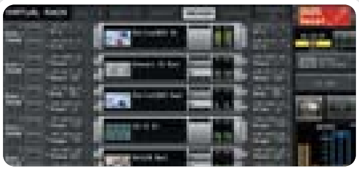

Studio-Class Premium Rack

The new Premium Rack unlocks the ability to use some of the most highly regarded studio effects in your live mixes, like the Rupert Neve Designs Portico 5033 Equalizer and Portico 5043 Compressor/Limiter.

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YAMAHA commercial audio

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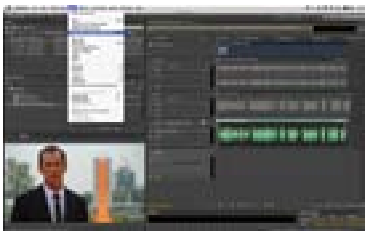

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DISTRIBUTION DEAL

Soundware distributor Time+Space has announced a new distribution agreement with sound library specialists Soundiron. The deal, which applies to all boxed Soundiron libraries, is the first of its kind for Soundiron.

The agreement also sees an extension to Time+Space's existing '+digital' service, which will allow users to download products straight away after purchasing DVDs.

www.timespace.com

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NEW PRODUCT

Livid and Line have teamed up to create a comprehensive controller integration that merges physical and virtual control for Ableton Live. The Code+Griid collaboration is a free remote script; Griid provides visual control of Ableton Live's clip grid; Code gives total control over devices, effects, filters and sound.

www.lividinstruments.com
www.line.net

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NEW PRODUCT

iZotope has released the Ozone Maximizer Rack Extension, a mastering tool for adding fullness and polish to music produced in Reason.

iZotope has redesigned its original Ozone Maximizer, used on many recordings, to complement the Reason workflow. Using iZotope's Intelligent Release Control (IRC) technology, the Ozone Maximizer can boost the overall loudness of a mix without causing distortion or pumping.

www.izoptope.com

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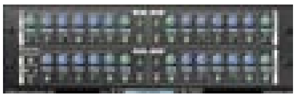
PRODUCT UPGRADE



Version 4 of Mathew Lane's DrMS spatial processor plug-in has been released, a native 32-bit and 64-bit VST/AU/RTAS plug-in for Mac OSC and Windows. Updates include CPU performance optimisation, and an improved GUI with a built in preset management systems.

www.mathewlane.com

Around The World With SSL

Solid State Logic consoles and products have been popping up in studios worldwide, with three major installs taking place recently. In Santa Maria de Feira, Portugal, Replay Studios – a full-service recording, mixing, and mastering facility – has installed an SSL Matrix console as the hub, and a range of SSL products, including Duende plug-ins, an X-Rack, and a MadiXtreme and Alpha-Link I/O system, to enhance its production process.

Vivace Music, a new professional recording facility in Montevideo, Uraguay, has installed an SSL AWS 948 Hybrid Console/Controller. The studio, designed by Walters-Storyk Design Group, has one studio room, shared by Control Room A and B, along with isolation booths. The AWS has been used by a range of artists, including Uraguay's national star Fernando Cabrera, Spanish pop star Sebastian Ramirez, the reggae band El Congo, and tango performer Maia Castro.

Noisematch Studios, in Miami, Florida, recently launched with a Solid State Logic Duality SE console as its audio hub. Duality has been installed in the control room of the recording studio (known as Noiselab) and is also wired to record live performances and events in a separate soundstage (called Noiseroom).

www.solid-state-logic.com

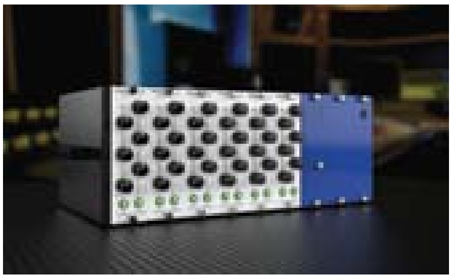
Big-Bottomed Modules

Aphex has launched the EX-BB 500 module, which packs the company's Aural Exciter and Big Bottom audio enhancement technologies into the 500 Series format. The mono EX-BB 500 module is the first release in a new line of 500 Series products being launched in 2012 by Aphex. Aphex's Aural Exciter technology has been used since 1975 to enhance detail, clarity, and imagine in a wide range of sources. The new module offers discrete Tune, Harmonics, and Mix controls that enable users to increase intelligibility to vocals, add punch and presence to individual instruments, and detail and airiness to mixers.

Optical Big Bottom processing extends low frequency power and spectrum, providing a richer and more percussive sound even at very low volumes, while avoiding the level build-up that can occur with traditional equalisation. The module includes Tune, Drive and Mix controls.

The Ex-BB 500 module fits all current 500 Series racks.

www.aphex.com



PRODUCT UPGRADE

CEDAR Cambridge V8 has been released, with many upgrades and improvements – the most obvious of which is that it now supports video playback, allowing users to view the visual content of up to eight AV files simultaneously while analysing and processing the audio contained within them.

Other improvements include an expanded file processing system, with powerful new region categories. The system also offers improved output mapping, an expanded Hot Keys section, and it has been upgraded to play, record, and process at 192kHz. Its restoration and other processing modules have also been updated.

www.cedaraudio.com

……

DISTRIBUTION DEAL

Source Distribution has been named as the new distributor for API's entire range of analogue recording consoles and outboard equipment in the UK and Ireland. Effective immediately, Source will supply all API products to the market. "API isn't a company to change distribution partners often," said Dan Zimmerman, API's Director of Sales. "But it became clear that there was only one distribution team that was going to be able to take our brand forward to the next level."

www.sourcedistribution.co.uk

PRODUCT INSTALL

Clear-Com's Eclipse-PiCo digital matrix, V-Series panels, Tempest 2400 wireless system, and HME DX121 digital wireless intercom are all used in The Newsroom, a new HBO drama about the inner workings of a cable news network, created by Aaron Sorkin. The Newsroom cast members use them as working props on the show – actors perform with live interaction going on in their earpiece, just as in a real newsroom.
www.clearcom.com

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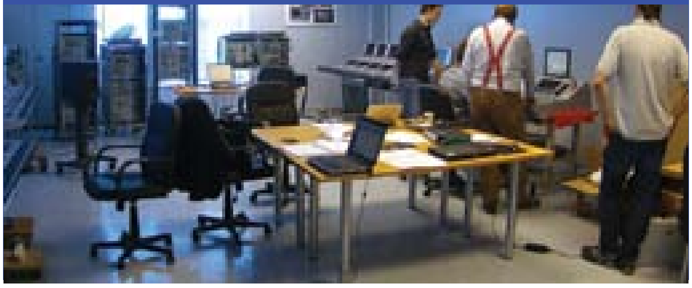
PRODUCT INSTALL

Yame FM, a community FM radio station in Yame City, has installed Japan's first Digigram IQOYA System. The station has four transmission sites across the city, and the station plays an important part in conveying public information including environmental and earthquake alerts. Yame FM has installed IQOYA *LINK units in the master control room, satellite studio, and at the transmitting sites.
www.digigram.com

Studer Heads For Olympic Glory

The BBC will broadcast the London 2012 Olympic Games from the specially built International Broadcast Centre in the Olympic Park, using seven Studer Vista and OnAir consoles, along with a Route 6000 network core. The BBC has promised to broadcast 'every session of sport of every sport every day'. The equipment will enable the BBC to take feeds from 34 participating Olympic Games venues for domestic transmission through its network.

The installation will see the deployment of three 62-fader Vista 9 consoles and a Vista 5, along with three OnAir desks (two OnAir 3000 and an OnAir 1500). Incoming feeds from the host broadcaster and the BBC's own studios will be fed to the desks, with the Route 6000 linking all the consoles at the core. A Vista 9 will form the hub of each of the broadcaster's three HD and 5.1 production galleries. In addition, an interactive gallery will manage and route 24 separate streams whose destination will be the internet, Red Button, and other platforms including Freesat, Sky and Virgin Media; these will be running in stereo using two OnAir 3000s.
www.harman.com



PRODUCT INSTALL

The University of Salford, UK, has chosen a Solid State Logic C10 HD Compact Broadcast Console to power the live production programme in its new £30 million digital learning, teaching, and research facility at MediaCityUK. The console is used for a wide range of live production teaching situations from one-on-one interview and panel programmes, to music programmes featuring everything from a pop band to a full classical orchestra. "We needed a console that was very flexible and could be set up very quickly for the different types of shows produced," said Ash Tidball, TV Studio Manager for the University at MediaCityUK.
www.solidstatelogic.com

ULTRASONE
(CeCe Rogers)
S-LOGIC plus
MxMetal
High Definition Headphones
THE headphone company
Don Dexter Agency ©

Calrec Has Sporting Chance

Calrec will have more than 30 consoles on air for UK outside broadcast events this summer, covering a "wide variety of international sports." For SIS Live, Calrec is being used in eight OB units: covering the tennis at Wimbledon, in OB1 with an Alpha and an Omega; at Greenwich for equestrian (OB2/Alpha); at Excel for boxing (Unit 10/Sigma); and another Sigma in Unit 12 covering rowing at Dorney. SIS will also use Sigmas in OB7 and OB8 to cover mountain biking at Hadden; then OB7 is used again for football at Hampden Park, with OB9 and an Omega covering football at St James's Park. SIS will have a Sigma in OB3 for footage from the Olympic Stadium in Stratford.

For CTV an Alpha will cover swimming and diving, and two Sigmas and an Alpha are in use for Arena TV to cover athletics and road cycling on The Mall, triathlon and marathon swimming at Hyde Park and road cycling at Hampton Court.

Telegenic will be covering football at Wembley and broadcasting 3D footage of athletics and associated ceremonies with audio courtesy of Calrec consoles.

NFP will be using their Gemini Trucks, which contain two Apollos, alongside HD2 containing a Sigma, NEP 1 with an Omega and HD10 with an Omega. Three brand new Artemis Lights are being utilised by the Russian broadcasters NTV+.
www.calrec.com

Remote Chance for Studio Technologies

Studio Technologies demonstrated new remote control and monitoring capabilities for its 5100-Series broadcast support modules at InfoComm 2012. The new capability allows for the remote control and monitoring of key functions via the Internet from an iPad, iPhone, or other Internet-capable devices. Applications for the 5100-Series include allowing a production team in a master control room to adjust mic pre-amp gains and related parameters and monitor audio levels.

It can also confirm operating status for modules located at geographically-diverse venues. "It has always been our goal to provide the very best tools that solve operation problems for production audio," said Gordon Kapes, President of Studio Technologies.
www.studio-tech.com

……

Jünger Audio Expands In Asia

German dynamics processing manufacturer Jünger Audio has reported a significant upturn in sales in the Far East. Recent clients include TVB Hong Kong, which has purchased three T*AP TV Audio Processors and three C8000 frame-based loudness control systems; NBTV in China, which has installed six D*AP LM4 four-channel Digital Audio Processors; and Hong Kong-based PCCW, which has bought a C8486 loudness control system for its NOW TV channel. Jünger Audio's CEO Peter Pors commented: "Although there are no hard and fast rules in the region regarding audio loudness, we are finding that many broadcasters are choosing to adopt the ITU 1770 and EBU R128 standards in order to give their audiences a better viewing experience."
www.junger-audio.com

Loudness Solved
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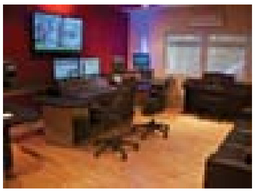
TWOEARS MAKES TEN



London-based post facility Twoears Post reaches its tenth anniversary this year, and is celebrating with the launch of brand new facilities in Chiswick. The new studios include two Pro Tools HD10 suites with massive sound effects libraries. The voiceover booth fits up to two artists in direct view from the control room. Recent clients include The Disney Channel, ESPN, Discovery Channel (UK and Europe), SYCO, Endemol, and Nintendo. The company has just finished sound for the BBC's opening titles for Wimbledon 2012.

www.twoears.co.uk

LUCKY IN DALLAS

Lucky Post, a full service post studio combining creative editorial, graphic design, high-end compositing, sound design, audio mixing and creative finish for advertising and film clients, has opened in Dallas, Texas. The studio is a sister company to production companies Directorz and Lucky Twenty One, and was designed by Russ Berger Design Group.

www.lucky-post.com

AVID SELLS M-AUDIO, CUTS STAFF

Avid has announced that it will be selling its consumer audio and video product lines, and also reducing the number of its employees by 20%. The company said it will be focusing on its media enterprise, post and professional customers. Consumer audio products are being sold to inMusic, the parent company of Akai Professional, Alesis and Numark. Avid CEO Gary Greenfield said that Pro Tools or "anything that is Pro Tools advantaged", for example associated I/O devices such as Mbox, will continue to be part of the Avid brand. Avid says these moves will make a saving of $80 million, with the "vast majority" of this coming from payroll, with 75-80% of the total being savings made by cuts in employee numbers.

www.avid.com

Get Heard In The City

Gloria Pitagorsky, Phil Loeb, and Keith Reynaud (formerly of Sound Lounge) have opened a new audio post studio in New York's Flatiron district. Heard City, a boutique audio post production company servicing the advertising, motion picture and television industries, is a 7,000 square foot space, designed by Brooklyn-based firm Brook Landscaping. The space consists of five mix rooms, including a Dolby-certified 7.1 cinema room and four 5.1 surround sound studios. The studio says that complete system and room parity, along with the most current Pro Tools platform available, allows projects to seamless flow from one studio to another. Heard City is one of the only audio post-production studios in the US with these capabilities. "Collaboration with our clients is key," said Pitagorsky. "It begins with the critical ear we offer in pre-production and ends with the seamless delivery of the final product." Clients that have already worked with Heard City, even as the space was under construction, include Budweiser, IBM, Puma, NFL, Google, ESPN, AT&T, Time Warner Cable, Microsoft, American Express, Dish Network and Target.

Mixers and sound designers at Heard City include Cory Melious, Jodi Levine, Evan Mangiamele, and Brian Scibinico.

www.heardcity.com

Objective Audio: Bride Gets Immersive Sound

imm sound's 3D immersive sound is used in American romantic comedy You May Not Kiss The Bride, which stars Katharine McPhee, Rob Schneider, Mena Suvari, and Kathy Bates, and is directed by Rob Hedden. The company is bidding to become the industry standard for cinema sound, and hope that this film will display the versatility of 3D sound, which is most often used for dramatic effect in action movies. You May Not Kiss The Bride contains an array of tropical landscape, which allows the quality and intricacy of the sound system to be demonstrated. "With this movie, imm sound proves to go beyond gimmicky effects for action movies," said Alex Artigas, imm sound Marketing Manager, "Our system is also capable of recreating beautiful ambiences and reverberations."

imm sound's 3D sound equipment operates in cinemas across Europe, the US, Latin America, and Asia, and the company is currently the world leader in the market, with the largest number of theatres with the 3D immersive sound system.

www.immsound.com

ATMOS LOCATIONS ANNOUNCED

Dolby has revealed the first locations around the world that will offer Atmos, its new theatrical audio technology in the hotly contested Objective Audio space (See *Audio Media*, June 12).

In addition to offering an immersive sensory experience, Atmos allows content creators to control the placement and movement of sound within the cinema. On the list are 14 cinemas in the US and Canada, two in Europe, and four in Asia. Dolby offices in New York, San Francisco, Burbank, London, and Royal Wootton Bassett will also be set up to offer Atmos. Two post facilities will currently offer Atmos: China Film Post, in Beijing, China; and Skywalker Sound at Skywalker Ranch in Marin County, California.

www.dolby.com

GOLDCREST'S MISSION TO LARS

The youngest aspiring mixers at Goldcrest Post worked together on the recently released *Mission To Lars* documentary. Directed by James Moore, the film follows Metallica fan Tom Spicer who is afflicted with Fragile X, an autistic-like syndrome, in an American road trip quest to meet his hero, Lars Ulrich from Metallica. Profits from the film will go to the Mencap charity. Harry Platford, Emmet O' Donnell, and Mike Tehrani helped newly promoted ADR Recordist Rob Humpage edit and tracklay the documentary, before Senior Re-recording Mixer Jamie Roden handled the final mix.

www.goldcrestpost.co.uk

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Royally Good Sound

A host of big names provided equipment for the events commemorating the Queen's Diamond Jubilee. More than 250,000 people came to watch some of the biggest names in entertainment, including Elton John, Paul McCartney, Kylie Minogue, Annie Lennox, Stevie Wonder, and Tom Jones, perform in a concert arranged by Gary Barlow.

One of the largest Midas console networks ever constructed was deployed by live audio specialists Britannia Row, whose Front of House Engineer Josh Lloyd specified a network comprising two Midas PRO9s and a Midas PRO2C for front of house, and XL8, PRO9, and PRO6 consoles for monitors. In addition to this, Lloyd employed 14 Midas DL431 digital mic splitters for 96 channels of house band, plus 96 orchestra channels. "It was crucial on this project to have the ability to network more than one console together and then route stems and audio between them," explained Lloyd. "This, combined with the head amp and split that the Midas DL431s deliver, has transformed what is essentially a large and complex system, into a tidy package."

Britannia Row also deployed Outline PA systems to cover not just the concert but also the full length of The Mall, St James's Park, Trafalgar Square, and Hyde Park. For the main concert area, the main system was made up of 96 Outline Butterfly enclosures with 48 Outline Subtech subwoofers.

Sennheiser microphones were provided by Britannia Row for the concert, with SKM 2500 MKII microphones with KK 105 heads for the presenters, and 2000 series in ear microphones for all on-stage IEMs. Artist microphones included SKM 5200s with MD 5235 for Gary Barlow, Cheryl Cole, and Jessie J, with a custom version for Kylie Minogue, Will.I.Am's SKM 2000 with 935 head, a KMS 105 wired Neumann for Annie Lennox, an SKM 2000 with 965 head for Renee Fleming, an e 935 wired microphone for Ed Sheeran, and Shirley Bassey's custom 'diamond' SKM 5200 with KK 105 head.

Clear-Com's Eclipse Median digital matrix intercom and V-Series key panels played an integral part, with Delta Sound employing three Eclipse Median intercoms and more than a dozen V-Series user control panels to facilitate communications. For the concert, Delta set up V-Series panels in front of the palace, on its roof, and in its back garden, allowing the crew management teams working the concert to co-ordinate their efforts.

www.clearcom.com
www.midasconsoles.com
www.sennheiser.co.uk
www.outline.it

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Studer Storms Bastille

L'Opera Bastille in Paris has just commissioned a new 32-fader Studer Vista 5 M2, with TFT meter bridge monitoring, from French distributor Audiopole. The new Vista 5 will fulfill all monitoring and recording duties, replacing the house's long serving digital desk in the control booth. The new Vista FX engine will enable Opera Bastille to add up to 24 channels of Lexicon PCM-96 effects to the console, while the 19-inch Vista Compact Remote Bay, with 12-fader touchscreen and keyboard, provides a slave or secondary desk to work in parallel with the Vista 5, while allowing the team to control the sound balance remotely from the auditorium.

"With the desk situated in the sound booth we had wanted to be able to make our own EQ settings during rehearsals and adjust the levels remotely," said Sound Director Philippe Taberlet. "This facility formed an important part of the tender, and the Remote Bay also gives us a spare and redundancy."

www.harman.com

Million Dollar DI

Countryman Associates has provided four Type 10S Stereo Direct Boxes for Elton John's Las Vegas show, The Million Dollar Piano. The piano drives a rack of sound modules, and the DI's are used to connect each of the separate tone generating modules to the monitor and FOH systems. "In designing the new audio rack for this show we needed to have a set of DI's that would not colour the piano sound whatsoever," said Lindsay Vannoy, Piano Systems Engineer for the show. "In addition to this we required components that would function well in the casino environment, which is very heavy with RF interference."

www.countryman.com

JBL Crown Hall of Fame

The 27th annual Rock and Roll Hall of Fame induction ceremony took place recently in Cleveland, Ohio, featuring performances by inductees Guns N' Roses, Red Hot Chilli Peppers, Donovan, The Small Faces, Beastie Boys, and The Crickets. New York-based Firehouse Productions supplied a live sound reinforcement system consisting of 32 VTX V25 line array elements in two clusters of 16, with 32 VerTec VT4880A full-size arrayable subwoofers. An additional eight VT4886 subcompact line array elements were used for front fills, as well as six VT4889 full-size line array elements for the centre cluster. Crown's I-Tech IT 12000HD series amplifiers powered the system.

www.harman.com

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Congratulations to Ben Costerton from High Wycombe, who is this month's lucky winner of the AM subscriber's draw. Each month throughout 2012, one randomly selected subscriber will win an sE 4400a microphone. To be entered into the draw, you must have a current digital or online subscription. To get one, go online to the address below. Good luck!
www.audiomedia.com/subscribe.html

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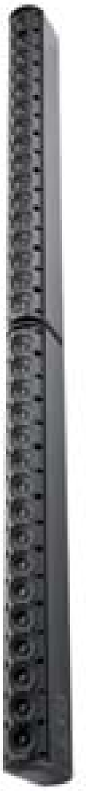
NEW PRODUCT

D.A.S Audio has unveiled two new subwoofers, the RF-118 and RF-218. Designed for use in permanent installations and mobile systems, both are passive systems. The RF-118 incorporates a single 18-inch LF transducer in a rear loaded horn bass configuration, with a maximum SPL of 135dB. The RF-218 has two 18-inch LF transducers in a bass reflex configuration, with maximum SPL measuring 140 dB.
www.dasaudio.com

Guetta Sounds Better

Liverpool-based sound company ADLIB supplied the audio system for David Guetta's recent London Alexandra Palace show. For this gig, the audio system was collectively specified by a combination of FOH Engineer Hassane Es Siahi and Guetta, with ideas and input from the ADLIB team, Systems Engineer James Neale and Carlos Herreros. They chose L-Acoustics K1, with eight K1 speakers used for the main left and right hangs to fill Alexandra Palace's 10,000-capacity Great Hall, together with two side hangs each of six L-Acoustics Kara boxes. Two further hangs of another eight K1s per side were used for delays, positioned level with the FOH mixer. L-Acoustics ARCS speakers were used for in-fills, and monitors consisted of two stacks of one dV-SUB with three dV-DOSC speakers on top. Es Siahi engineered the show using a Soundcraft Vi1 console and one of ADLIB's standard control racks containing Lake LM 44 and 26 processors.
www.adlibsolutions.co.uk

NEW PRODUCT



JBL Professional has introduced CBT 200LA-1 at InfoComm. The array of 32 drivers is 200cm tall, and provides consistent pattern control over a wide bandwidth. Vertical pattern coverage is adjustable to either 15 or 30 degrees to match the architectural characteristics of a wide variety of venues, and a variety of mounting heights. In addition, an asymmetrical progressive-gradient coverage mode can be selected, which directs more sound toward the far areas of the listening space to help reduce variation in SPL levels from front to back throughout the area.
www.harman.com

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Entec Scopes Out Comedy

big
comedy
night

Entec Sound & Light supplied full technical production and crew for the recent Big Comedy Night event for charity Scope at London's Hammersmith Apollo. The line up included a rare appearance by Ben Elton, who co-hosed the evening with Pub Landlord Al Murray, plus other acts including Robin Ince and Sally Phillips. Entec's Ed Hammon installed a standard Hammersmith Apollo system for spoken word shows, which comprised main left and right hangs of nine d&b Q1s a side, with two Q-SUBS at the top of the array to help get the low-end to the back of the room and up onto the balcony. There were three Q-SUBS ground stacked per side, with four d&b E3s and four Q7s for infill. All the speakers were driven by d&b D12 amplifiers. The time alignment and EQ was determined in advance using d&b's ArrayCalc.

Hammond engineered the show using a Yamaha LS9 16-channel console, with monitors – six M4 wedges – also mixed from FOH.

www.entec-soundandlight.com

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A Bit Of Blu From dbx

dbx made several product announcements at InfoComm, including the introduction of its TR1616 BLU link I/O, which is a 16-input/16-output digital on ramp/off ramp module. It allows users to easily create a flexible digital snake or network, using the BLU link digital audio bus. Users can configure up to 256 channels at 48kHz or up to 128 channels at 96kHz, with no addressing or programming required. Also announced at the show was the PMC Personal Monitor Controller, a remote control located near the performer that lets them easily set up and control their own personal mix of up to 16 channels of audio.

www.harman.com

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Building On Architecture

HiQnet introduced Audio Architect configuration and control software at InfoComm, which the company says represents 'the single-most comprehensive audio networking solution for professional fixed install applications'. Audio Architect combines the functionality of its predecessors, System Architect, and London Architect, enabling a greater level of integration for the end user. The new software platform will provide 'system-focused' configuration of over 100 HiQnet products from AKG, BSS, Crown, dbx, JBL, and Lexicon. It combines the open-architecture DSP backbone of the BSS Audio Soundweb London family with the comprehensive workflow and customisable control of System Architect.

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Big Brother, Where Art Thou?

Reality TV shows have become fixed points in the annual scheduling calendar. But, asks KEVIN HILTON, are the brother and the sun related?

There was a time when, for the British, hearing the first cuckoo of the year was a harbinger of summer. It was so engrained in the national psyche as a noteworthy event that people would write to *The Times* newspaper to let the rest of the country know the seasons had changed.

In these days of pop culture, seeing the first trailer for the new series of reality TV show *Big Brother* has taken over from the call of cuculus canorus as the first sign that the good weather is on the way. Or, as this is the UK, perhaps not. Certainly being confined in a fake house stuffed with microphones and cameras and populated by sufferers of narcissism, passive-aggression and OCD for several months seems a good way to avoid the torrential rain that has come in place of summer weather – although, to be very British about this, it is good for the ground-water level.

The cuckoo did seem likely to regain its rightful place as herald of summer when Channel 4 axed *Big Brother* and in 2010 aired what was thought to be the last series of the series that had revitalised the broadcaster's fortune and notoriety over ten years but which had become a tired format, although no less nasty.

The show still had its fans, who faced the prospect of losing a fixed point in their TV viewing calendars for sadism and ridiculing deluded or troubled wannabes dressed up as social experimentation. There were potentially more serious ramifications for the TV business itself. Although production company Endemol had already made a packet from the format, which was sold round the world, attention shifted to the facilities companies that had become so closely identified with the show, Elstree Film Studios and Roll to Record (RtR).

Keen eyed readers probably noticed Elstree's absence from last month's WUUK assessment of how the UK's old film studios were faring today. This wasn't a deliberate oversight; space is tight and the Elstree story has perhaps more twists and turns than those of its contemporaries. Founded in Borehamwood to the north of London in the late 1920s it was the home of British International, later Associated British, which film chronicler Leslie Halliwell described as the only UK company to rival the power of the Rank Organisation, with its base at Pinewood. Little wonder that a 1982 history of Elstree by Patricia Warren was sub-titled "the British Hollywood".

Elstree was the first studio in the country to be wired for sound, with the new fangled technology added to Alfred Hitchcock's 1929 thriller *Blackmail*, which originally started out as a silent feature but became the first UK talkie. From the 1950s to the 80s it hosted an impressive range of British and international productions, including John Huston's *Moby Dick*, *Look Back in Anger*, Tony Hancock vehicle *The Rebel*, Cliff and the Shadows in *Summer Holiday* and *The Young Ones*, TV series *The Saint* and *The Avengers*, *The Railway Children*, *Murder On The Orient Express* and, perhaps most famously, *Star Wars*.

After several part changes in ownership Associated British was sold to EMI in 1969 and then the Cannon Group, the dominant film production and distribution company of the 1980s.

The fortunes of Elstree have fluctuated dramatically since then and the studio has faced the threat of closure. Now owned by an operating company run by Hertsmere Borough Council, Elstree is still involved with major feature films, most recently *The King's Speech* and Guy Ritchie's second *Sherlock Holmes* movie, but has a lucrative parallel business in large-scale TV production.

Big Brother has been the leading example of this and the building of the *BB* House and production galleries at the studios has been a banker for it, so cancellation by C4 was yet another piece of bad luck for Elstree. After much rumour mongering and reportedly brutal negotiation Channel 5 picked up the show in a two year deal and, despite doubts that it was past its sell-by-date, has reinvigorated the format.

RtR was the other facilities company affected by the cancellation of *BB* as it had been supplying flyaway galleries, robotic cameras, wireless mic systems, and other production facilities since the first UK series in 2000. Executives at its present owner, the NEP Broadcasting group, played down the importance of *BB* to the company's business, saying this was now an opportunity to find new contracts, but there must have been a corporate sigh of relief when it signed a two year contract for the resurrected show.

Mick Bass, Commercial Director of RtR, commented last year, "We are very excited to be invited back to the *Big Brother* house. We will be bringing our considerable past experience on the show, together with a state-of-the-art infrastructure and an exceptional technical team."

The idea behind *BB* is that the contestants are observed behaving as normally as they can in such an environment but broadcast technology hardware is obviously apparent both to them and the viewer. Manned and remote controlled cameras capture almost their every move while they wear lavalier mics fitted to elastic lanyards so everything they say can be heard (if it isn't bleeped or drowned by birdsong). This year's production is using Sennheiser 5212 transmitters, which were introduced for it last year, while show presenter Brian Dowling, who won *BB* in 2001, uses a 5200 wireless stick mic fitted with an omni-directional head for the live eviction.

Whatever ones view of reality TV, and *BB* in particular, it has called for ingenuity in broadcast production technology and is a useful earner for facilities companies and freelancers at a tough time for the industry. Probably the most depressing thing about it is that the final show of the series tells us that winter is not far away...

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Dave Gahan Installs SSL Matrix in NYC Studio

Engineer Kurt Uenala has installed an SSL Matrix in New York City's Schtudio Blanco, where he works with Depeche Mode front-man, Dave Gahan. The two just completed writing songs and cutting demos for Depeche Mode's thirteenth release, due in Spring 2013.

Uenala chose the Matrix as the hub of the new studio after Gahan asked him to put together a 'dream studio' that streamlined the production process. Although it was the unit's small footprint that sealed the deal, Kurt was first attracted to the sound and flexibility of the Matrix.

Martin Gore, a founding member of Depeche Mode and songwriter for the majority of the band's songs to date, has also installed an SSL Matrix in his home studio in Santa Barbara.

"For me the analogue summing was eye opening. It is beautiful," Uenela said . "Even with demos, it sounds majestic. When we mix, it makes a huge difference in the spatial placement of the sounds, even when it's all synthesisers and samples. It is perfect for that. And it looks fantastic, which is important too.

"The whole architecture of the Matrix, which lets you use outboard gear like plug-ins, is mind blowing. I've never seen anything like it. When I was told about its functionality, of course, I was sold, because I'm more of a computer guy, working in the box, working on laptops. So, to have Total Recall available with outboard gear is wild and I make use of it constantly. I also wanted to have a good monitoring section for A/B-ing stuff. When I do mixes, I love to go back and forth between different speakers, and the Matrix monitoring section is really good."

Originally from Aadorf, in northeastern Switzerland, Kurt attended the Berklee College of Music in Boston before relocating to New York in 2000. Since moving to the Big Apple, he has worked on albums, singles and remixes for Erasure, Moby, The Raveonettes, Yelle, Nellie McKay and Soulsavers. Kurt also works on his own all-electronic solo project, Kap10kurt, when his busy production schedule allows.

Masque Sound Celebrates in Central Park

As the curtain rises on the 2012 season of Shakespeare in the Park at the Delacorte Theatre in Central Park, Masque Sound, a leading theatrical sound reinforcement, installation and design company, is celebrating its 50th anniversary of providing audio equipment and services to the theatre for one of New York City's most beloved traditions.

Shakespeare in the Park moved to its permanent home at the Delacorte Theatre in 1962 and since then, New York natives and visitors alike have enjoyed free Shakespeare performances each summer season. The majestic, open-air theatre has a seating capacity of 1,800, and each season more than 100,000 people attend performances produced by The Public Theatre.

"Masque Sound has enjoyed a long and successful relationship with The Public and Delacorte theatres and their summer productions of Shakespeare in the Park," says Dennis Short, Masque Sound. "Being able to celebrate 50 years as the theatre's audio equipment provider is quite an accomplishment and demonstrates our commitment to supporting the theatrical community. The Delacorte is in such a magnificent setting, and being able to provide theatregoers with an audio experience to match their visual experience is something we take great pride in doing."

Celebrating its 50th Anniversary, the Delacorte officially opened in Central Park on 18 June 1962 with The Merchant of Venice. The first Delacorte summer season concluded with King Lear. Since then, more than 100 productions have been presented for free at the venue-come sun or rain shower.

"Some years have been drier than others, but throughout our partnership, Masque and Shakespeare in the Park have developed methods for protecting the equipment from water damage and mould," says Short. "We're at the mercy of Mother Nature, but manufacturers such as Meyer have developed water resistant loudspeakers and rain hoods to protect the speakers from water getting inside. It's been a work in progress but every year it gets better."

This summer, Daniel Sullivan will return to direct *As You Like It* this month. The second show of the 50th anniversary summer season will be Stephen Sondheim and James Lapine's musical *Into the Woods,* beginning performances at the end of July.

"We are so pleased that Shakespeare in the Park has provided us the opportunity to support their productions over the 50 year span, especially as several have moved on to Broadway following their run at the Delacorte," adds Short.

Manhattan Center Studios Upgrades

Manhattan Center Studios, the historic performance, music recording and television production complex in central Manhattan, recently completed a massive upgrade to its Studio 1 TV production facility, choosing a Solid State Logic C10 HD Compact Broadcast Console to handle audio production for its TV1 Control Room. Recent programmes produced using the new C10 include BBC America's new *Would You Rather…?* With Graham Norton and Yes Network's *Centerstage*.

"Before the physical upgrade to Studio 1, we were constantly struggling with a digital console that was really designed more for a music recording environment, so everyday TV items like generating a simple mix-minus were a chore," says Marvin Williams, director of video engineering and operations, Manhattan Center Studios. "With the advent of the C10, we now enjoy pushing a button to create one or multiple mix-minus feeds, saving time and letting our engineers focus on critical mixing for live-to-capture sessions. The C10 really solves our problems for audio production by giving us great sound, flexibility and features designed for TV applications."

Manhattan Center Studios encompasses the magnificent Hammerstein concert space featuring 75-foot ceilings, The Grand, a 10,000 Sq Ft (929 m^2) space seating 1,200 people, two audio recording studios and two large TV production studios with associated edit suites. While the C10 in the TV1 Control Room is primarily used for Studio 1 productions, the console can service the audio needs of any of the Manhattan Center's recording or production spaces, including The Hammerstein, through a 256-channel router. The Hammerstein, one of New York City's most renowned performance spaces, was built in 1906 by theatre impresario Oscar Hammerstein 1 as the Manhattan Opera House, with the aim of offering New Yorkers cheaper seats than the rival Metropolitan Opera. This landmark venue can accommodate up to 2,200 seated guests in its 12,000 Sq Ft (1114m^2) space.

"We really needed to move into the future and the C10 allows us to do just that," says Travis Butler, Chief Engineer.

Growler Bites Installs Genelec

Danny McDonald, owner and co-owner of numerous bars, pubs and restaurants in Lower Manhattan, has opened a new establishment, The Growler Bites and Brews, that features a sound system comprising Genelec 8030A Bi-Amplified Monitors. McDonald has relied on the Genelec brand since installing his first system in 2000, and he is currently planning another large installation of the monitor speakers at New York's historic Pier A.

The Growler Bites and Brews bar and restaurant is located in the Financial District on Stone Street, which is often referred to as Lower Manhattan's restaurant row and is the location of several of McDonald's other establishments. The new eatery is named after the traditional half-gallon jugs used to transport beer and sports a decidedly doggy theme, even offering a corral for its four-legged patrons while their owners chow down on organic hotdogs, microbrews and other fare. The Genelec speakers for this newest install were purchased from Guitar Center.

For smaller rooms, such as the Vintry bar, a smaller speaker may be appropriate, he comments. "You can change the scale of the Genelec speakers to fit the restaurant environment, of course, and the sound will still be consistent. But I generally go with the medium range, the 8030A or the older 1030A, which is what I have in a lot of the places. They have punch and volume, and tremendous headroom. I always try and make it so that a customer is never further than eight feet from a Genelec speaker."

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Bob Moses, Executive Director, AES

Bob Moses talks revolution at AES. PAUL MAC finds out what's going to change…

It was announced in December last year that Bob Moses would be taking up the reigns as Executive Director of the Audio Engineering Society, replacing Roger Furness. In some quarters, the AES had become a punch bag for those who saw the decline in exhibitor support for the European convention, for example, as a sign that the AES was no longer fit for purpose. The fact is that the AES does far more than just organise exhibitions – it's a hub for academic excellence, innovation in technology, and much more, and it seems that the time is right for it to both listen, and make itself heard.

Paul Mac: What is your role in AES?
Bob Moses: I work for the executive committee. They answer to the board, and the board answers to the membership. So even though I'm considered the CEO, I'm really three layers down in the power hierarchy.... The board and the exec committee are all volunteers... so even though I'm three layers down, I end up having to make quite a few decisions and probably do a lot more than somebody three layers down would normally do in an organisation...
But I'm very aware of the fact that it's not my AES, it's the membership's AES, and we answer to the membership.

PM: What are the main priorities for the new job?
BM: In the short term, it's just figuring out how AES works and what the problems are, and whether there are any quick fixes that I can make. I'm happy to find out that it's not that broken, internally.
There's a very small staff – only six full time paid staff. They had a lot more than that not too long ago, but there's been quite a bit of attrition in the last couple of years. I'm trying to bring in some resources to cover all the bases.

Looking at the longer term, we've got the situation in Europe that has to be addressed, figuring out what it means to have a convention in Europe and, moving forward, and what do people in Europe need from AES?

We also need to do a much better job of explaining ourselves and what value AES brings to the industry, and how people can plug in and participate. I think it's been quite an engineering-oriented organisation, and engineers aren't that good at marketing... I've been very careful not to just come in and make changes. I don't feel ready.
My priority now is just to listen, and learn what people need from the AES.

PM: The exhibition at the European AES convention this year only just made double figures in exhibitor numbers. What do you think the main issues are, and what are the main concerns of the exhibitors?
BM: I've heard just about every idea and complaint imaginable. I was hoping that everybody would say the same thing – like it's always in the wrong place or time of year, or it's not addressing this one market. And what I hear is, for every person there's a new complaint. So yes people aren't happy that it's in small cities, or in the same cities as other big shows, or that it's right after or before another major event, or that it's not focused on a market that's largely gone online so there's no retail in that market any more, or that Europe is too fragmented and they can't get enough critical mass in one place, and so on, and so on. What I'm looking for is a common thread that can tie everything together. It may be that Europe is too fragmented.
If we remain focused on recording – it's a big if – but if we do that's a very fragmented, very small market. It might not be viable to have a show that focuses on that, especially in Europe where everything is fragmented.

We're doing some experiments in San Francisco to see if we can address some of these fragmented areas in clever ways, and if they work then we can hopefully take those to Europe and plant those seeds and see if they grow. One of them is a project studio expo – almost an event within an event that really celebrates the project studio business and the change in how music is recorded today. They need a lot of support in running their business, not just the audio activities, but talking to lawyers and accountants and so on, and running a business. They need to be able to connect with clients and partners, and they need a stronger voice with some of the vendors that they feel aren't meeting their needs.
I think there's a lot of ways AES can help and serve these people, that it hasn't in the past. Just inviting the vendors to come in and demo the products is perhaps not serving those people very well.

Maybe in Europe in the future we'll be more focused on training: a broader view, not just how to mix or do some particular audio skill, but helping people with career and business development in general.
Again it's about serving needs. If my friends are spending a third of their time doing IT, then maybe we should be helping people with IT. We want them to be flourishing in their audio careers, and whatever we can do to help them is on the table.

> "I've heard just about every idea and complaint imaginable. I was hoping that everybody would say the same thing – like it's always in the wrong place or time of year, or it's not addressing this one market. And what I hear is, for every person there's a new complaint."

...One of the most common threads I do hear, is that AES hasn't listened... It's not so much the listening part that's been lacking, it's been the action – and the willingness to take some risks and make some radical changes. You saw a radical change last year, a change in the Executive Director. And if you were in some of the meetings in Budapest, you would have heard an extremely different conversation than what I've heard the last 13 years in the board meetings.
There's almost a renaissance going on within the AES right now, and it's really all about listening and realising what people's needs are and acting on that. It may not be visible outside of AES yet until we start implementing some of these things, but I hope people trust that we're not running forward with our eyes closed.

> "We also need to do a much better job of explaining ourselves and what value AES brings to the industry, and how people can plug in and participate. I think it's been quite an engineering-oriented organisation, and engineers aren't that good at marketing..."

...We've got ten months until the next AES Europe, which is really not enough time, so I don't think you're going to see the new AES in 2013. I think you'll see the first steps towards it in 2013 and hopefully it will reflect our genuine commitment to what people want, and to serving them better.

PM: It's possible that a lot of people do not understand what goes on academically in the AES. How does the AES marry academic and private interests?

BM: That's a fascinating question. I can look at my own experience. Back in the early 90s I was really interested in computer networking... It was almost a hobby for me. I started talking about it at some committee meetings at AES and found some other people who had similar interests. We started a discussion through AES standards about audio networking, and then I stumbled on FireWire in its early stages. It was being thought of really as an Apple interface between monitor and keyboard and so on, but we started playing with running audio over that, and talking about it, writing papers about it, creating some discussion about it at AES events. That sort of built until it became a movement, and pretty soon we had protocols being standardised, we had workshops happening at AES conventions, and we had excitement around it. I was able to build a little business around that, licensing implementation which got deployed into the industry.

...Look at digital audio and MP3 and all these amazing technologies, which began in the research world and got deployed in the industry. AES has played a key role. Randy Lemke, the Executive Director of Infocomm, said to me a couple of years weeks ago that he is really pulling for AES because this is where all the new stuff comes from, where the innovation happens, and eventually it turns into new products and growth in the marketplace and in the retail end of the business.

PM: Is the AES still as effective in standards creation?
BM: We have a slightly different approach to standards than some of the other organisations, being a 501(c)(3) entity, we've got this open process that we must follow, where if anybody brings an idea for a standard we have to open our arms and invite them in. Of course they have to show enough interest and activity and results to keep that going but we're not selective about saying we're going to go after this area or in trying to say we're going to make a standard for this particular work process or whatever. It's more that we receive from outside what needs to be standardised.

That's resulted in a lot of activity that started and fizzled. People realise how much work it is, they get scared and run away. But it's also resulted in some very important standards – AS3 is probably the best example. Other organisations will create a standard, and then create a certification training program round it, and they'll work the system so that to do your job you have to go through that certification for that standard, and it's a neat little business model. But that's a different kind of organisation, that's not a 501(c)(3) organisation. We can't play the same standard game that some others can play.

We basically provide a resource for people to come together and share an idea, and sort of work on it together without running afoul of the anti-trust laws and so on. It's just the way it's been set up, but it can certainly change, and we're looking at some interesting ways to reach out more with the standards and perhaps brand them and help the industry to rally around them a little bit more effectively.

> "There's so much good going on within the AES that it's painful to hear people criticise it, especially those that are just untrue. Those allegations that came out last year about Roger and so on. Please – let's not go down that path, that's just BS."

PM: So what are the priorities for the academic side of things?
BM: Within the world of academia, they have this process for measuring the importance of a scientific journal, called Impact Factor, and we're looking very closely at what our impact factor is with the AES journal and trying to improve that so that we continue to attract the best research. It's a number that you're given that's largely associated with how many other researchers are citing a particular paper that we've published. The more people that are referring to you, the higher your ranking gets. Again, because we're not very good at getting our message out, our impact factor is not as high as it could be...
Not everybody outside of AES knows about all this amazing research we have, and therefore they're not citing it, and our impact factor is degraded a bit. So the research people are looking at that carefully and improving that.

> "...If you were in some of the meetings in Budapest, you would have heard an extremely different conversation than what I've heard the last 13 years in the board meetings. There's almost a renaissance going on within the AES right now, and it's really all about listening and realising what people's needs are and acting on that."

Serving the research world is almost the polar opposite of serving the business world. Business people have a very clear idea of what their product is, who their customer is, and how they want to get their message out, and so on. In research every idea is invited, you try not to judge things too early. There's a lot of discussion that's not really intended to go anywhere other than just to expand knowledge.

PM: How does the AES membership demographic break down?
I assume the commercial and academic numbers out-weigh the practitioners?
BM: To be honest, I don't know how the numbers break down exactly. I can tell you that student membership is huge, about two thirds of the membership. Professional full members, I'm guessing are probably 20 percent of the membership, and those are where you'd expect most of the seasoned professionals. If you go to a convention, you see maybe 3000-4000 people hanging out in the tech program area and you see 15000+ hanging out on the exhibit floor. That would suggest a much higher percentage of people in manufacturing, but most of those people aren't AES members. I've been beating on our internal database guy to help figure this out. The data's there, we just haven't figured out the mechanisms yet to do good reports on it.

...For people who are working for a manufacturer, or behind a mixing board in a nightclub, for example, the value hasn't really been communicated. Again, I think that there's tremendous value.
If you go to our website and look at the tutorials we have for people doing live sound, or installations or whatever, there's a wealth of info up there for them. They can only get that as a member, but I don't think we've even told people about that stuff.

It may be that the idea of membership is attractive to one category of people, and just coming and participating in an exhibition or something is a separate category. That's something I'm playing with.

PM: It seems that the biggest problem might be that people just do not know what the AES does, and how it can be of benefit to them?
BM: It's one of the best kept secrets in the industry... There's so much good going on within the AES that it's painful to hear people criticise it, especially those that are just untrue. Those allegations that came out last year about Roger and so on.
Please – let's not go down that path, that's just BS. This is a resource for all of us to leverage, to make our lives better. That's why it exists... It's not there to enrich anybody in particular, it's there to make our industry better. We're such a small industry we can't afford to divide and kill ourselves.

If people have strong feelings that AES is not addressing the needs of manufacturers and exhibitors, one observation that could be made is that there are very few of any of those types of people being represented on the board... So, of course they're struggling to meet exhibitors' needs, because they're not at the table helping to put this thing together. So I have to make a very serious effort to go out and talk to these people, and pull out this information to get it in – but we'd love to have more people... It's a very open process, anybody can run, and there's no political force trying to shut those people out or anything. We'd love to welcome more and help make this better.

If there's one thing to take away, we just hope people realise that we're not inward focused any more – We're here, we're listening, and we want to serve them; that's what it all boils down to. And it's not lip service, because look, they picked a different guy to run it, and things are changing.

INFORMATION

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Infocomm 2012

In contrast to last year's affair in Orlando, there seemed to be a real buzz about InfoComm this year, and certainly more new products. Although undoubtedly the Pro 1 from Midas and Behringer's X32 stole the show, there was plenty more to talk about. *Audio Media* looks at some of the highlights…

When it was revealed that The Music Group (Behringer, Midas, Klark Technik) had bought Turbosound from Proel at 9.30pm on the Sunday before the show, it raised one or two proverbial eyebrows. Turbosound's Simon Blackwood was particularly positive about the acquisition, however, at the Behringer press conference.

"We have been working diligently and relentlessly at developing our technology over last three years and it's culminated in the Queens Award for Innovation for 2012," he says. "Now we have the backing and resources of Music Group, we stand a major chance of being disruptive in our industry. Uli [Behringer] has made it quite clear that we have to grow significantly to deliver our potential, so that's what we're going to do." The new Behringer X32 console is previewed on page 27, and the new Midas Pro 1 on page 26 of this issue.

On the loudspeaker front, Renkus Heinz introduced its new Varia series. Targeted at both the touring and install markets, it is modular in design and configurable as either a point source horizontal array or a vertical line array, but can also be ground stacked. There are multiple cabinets: a seven-and-a-half-degree, a 15-degree, and 22-degree model; and the manufacturer claims it is one of the most flexible loudspeakers it has ever made. The Varia series also features interchangeable waveguides and transitional waveguides from 60-90 degrees or 90-120 degrees within a single cabinet.

Lectrosonics showed its new Aspen DNT Dante 32 I/O network processor, a follow-up to the original Aspen system that was launched last year. It boasts extremely low latency (1.5ms even with a system that's got 48 inputs, for example) and, according to director of business development, Karl Winkler, utilises Dante because of the protocol's 'gathering of momentum' in recent years, and the fact that it runs off standard off-the-shelf network hardware.

"You don't need any expensive switchers or routers, and Dante adds a lot of flexibility to the Aspen system that we didn't have before," Winkler reveals. "It takes it from being an isolated system to a network system with the audio itself. Dante adds very little to latency to route audio to a room, and audio needs to be real-time, after all. If you're dealing with live conversations or conferencing, you can't have 20-30ms of delay as it screws up everything."

RTW showed its TM3 loudness monitor – its smallest offering yet, which is available in both stereo (two-channel PPM) or six-channel (three stereo pairs or 5.1 metering) versions. The screen on the ultra-compact unit can be oriented either vertically or horizontally, and the breakout box has analogue inputs on RCAs with a trim on the pot. RTW's Devicer DC1 software application allows users to create up to 10 presets quickly and simply, with just a finger swipe.

In terms of applications, the manufacturer says for loudness alone it is suited to broadcast, post-production and film; and for the PPM and phase part, it's pretty much anything audio, be it mastering in major studios, working in edit suites, or even home recording. The TM3 is also capable of True Peak, which is now a spec for broadcast; and in the professional recording and mastering world, will be a handy tool for users that are mixing particularly hot and getting very close to dBFS.

US manufacturer, Posse Audio, showed its new personal monitoring system, which, it claims, has been designed 'by musicians, for musicians'. The system comprises a control box, a floor box (receiver), a belt box, and a set of wireless headphones. The control box attaches to a vocalist's mic stand and enables the user to control the vocal and instrument level, as well as the ambient room noise, which is picked up using the device's two built in stereo L/R ambient room microphones. The floor box and control box are connected via an HDMI cable, and the system includes an inline chromatic guitar tuner and phantom power for condenser mics.

XTA presented the DS8000, which succeeds its popular DS800 mic/line splitter. Designed to split mic signals between the FOH and monitor consoles, it also has additional transformer balance outputs on the front to allow it to split audio to OB trucks. There are buttons on the rear panel that allow users to do, for example, a stereo 16-way split, and the front panel is illuminated. There is also a redundant power supply in on the back, which means when two units are connected via its five-pin XLR connections, the second unit kicks in and takes over seamlessly if the mains lead is kicked out of the other. The DS8000 is also the first XTA product to incorporate its newly-designed mic pre-amp.

On the Harman booth, Soundcraft revealed that its ViSi remote iPad control for the Si and console range is now available for free at the iTunes store. The App gives users full remote control over multiple Si consoles' input channels, aux sends, EQ settings and mutes from one single iPad, utilising Harman's HiQnet architecture to connect the network of consoles to a wireless router, which in turn communicates to the iPad.

The flexibility doesn't end there, though – multiple iPads can also be deployed on the same network, so artists can use the App to control their individual monitor mixes on stage. Soundcraft has also revealed that a software update is coming soon, which will extend these benefits to users of its Vi range of consoles.

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MIDAS PRO 1

Compact Digital Console

Audio Media gets the low-down direct from the manufacturer's mouth at the Las Vegas launch of the Midas Pro 1.

After Midas's much anticipated new range of digital consoles was unveiled last year – the Pro 2 and Pro 2C – the manufacturer has once again stuck to its 'top down' policy, choosing to introduce the smallest of the Pro family last. The super-light and ultra-compact Pro 1 not only boasts all the functionality of its bigger brothers, but it is also Midas's first standalone digital offering; and, as Richard Ferriday explains, "You can just pick it up and put it in the car."

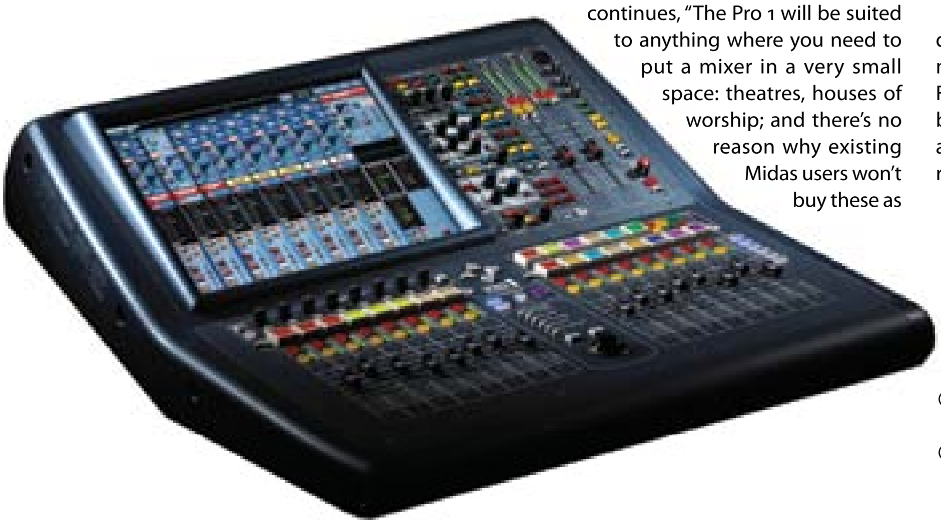
One thing that is different about the Pro 1, in comparison to the other Pro consoles, is that it boasts an entirely new all-aluminium frame, which is how the company managed to keep its weight down to just 21.5kgs. Equipped with 24 mic inputs and 24 outputs right on the back, users now have the option to simply plug in a mic or two and start mixing. Alternatively, as the console works with all Midas's I/O digital stage boxes, when connected to one of those, it is possible to mix up to 48 inputs simultaneously.

"We've always had a top down policy with our consoles, and it's always worked very well for us," reveals Ferriday. "We are now at Pro 1 level, and it's going to be very interesting to see where we can go from here as it's difficult to imagine how we can get any smaller than this, to be perfectly honest."

Indeed it is, considering its features are pretty much identical to the Pro 2 and Pro 2C consoles: it has the same FX, the same processing, and the same generation two software, the latter meaning that all Midas show files are fully compatible.

"You can take one [show file] and load it into any of the other consoles," Ferriday adds. "It'll give you the same audio quality and the same processing options; it's just a smaller box and a smaller mix matrix as well."

The Pro 1 has 16 faders and its default state is eight input faders and eight VCA faders. It has a total channel count of 48 (including its eight aux returns), though combining the onboard I/O with its three AES50 boards means a maximum network size of 96 inputs and 96 outputs can be achieved, which makes it "Very much a multi-application console," according to Ferriday.



"Because of its flexibility and versatility," he continues, "The Pro 1 will be suited to anything where you need to put a mixer in a very small space: theatres, houses of worship; and there's no reason why existing Midas users won't buy these as extensions or side cars to their current consoles," he insists. "For monitoring it's great too, as the console is in permanent fader flip mode, so you can select any of the aux sends, and the fader is then free to become the contribution to the selected output. You can run a 24-way monitor mix off this tiny console very, very easily."

Under the hood is a rack full of Midas plug-ins: six different reverbs, two delays, flanger, chorus, phaser, dynamic EQ, and multi-band compression. There are also more than enough Klark Teknik graphic EQs onboard to assign one to each of the console's 27 output busses. Other functions include swept high and low pass filters, two separate gain controls (a remote control for the analogue gain on the stage box and a separate digital gain to allow you to control the gain structure through the console), the same multiple compressor plug-ins as the larger consoles (four different compressor plug-ins for each input and five for each output), a four-band parametric EQ for all the inputs, and a six-band parametric EQ for each of the Pro 1's 27 mix busses. The Pro 1 also has a large daylight-visible TFT screen which means even in direct sunlight the user will still be able to see everything on the screen.

On the right hand side of the console is the channel strip, which Ferriday says is particularly user intuitive: "Once you select your channel, you get the channel overview screen, then you get to the area of processing you need, and you're working in this 'zoomed in' view of the channel strip. That then becomes touch sensitive, so the screen automatically gives you visual support for any control that you are touching," he explains. "It's much faster than having a standard touch screen, because ordinarily you'd touch the screen to take you to the channel strip; this works the other way round."

Going into production at the moment, Ferriday estimates that the Pro 1 will be shipping by the beginning of August. The Pro 1 touring package, including flight case, will have a competitive retail price of US$11,500.

"We've had a handful of them out, in Europe mostly, doing low-profile beta testing shows over the last few months, which really helped us prepare for this release," Ferriday concludes. "We were able to add a few extra bits to the console and tweak some features as a result, and thankfully the feedback we've had so far has been really great."

INFORMATION

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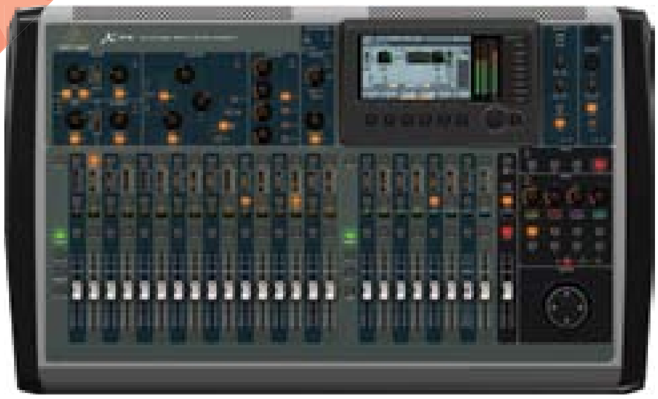

BEHRINGER X32

Compact Digital Console

At Infocomm this year, PAUL WATSON gets a preview of Behringer's new entry to the digital console market.

Behringer says this compact digital console combines a user friendly interface and enough power to allow it to more than hold its own against many of the existing desks currently on the market. And the X32's list of features is certainly impressive: it boasts 32 fully programmed pre-amps based on a Midas design, 25 motorised faders, a massive I/O section (168 inputs and outputs), and customisable scribble strips, to name a few.

The X32 also has a virtual FX rack with eight true stereo FX, as well as a built-in 32 I/O FireWire/USB 2.0 computer interface, enabling it to be deployed for both live and studio recording applications. The console also provides connectivity to Behringer's P16 personal monitor system and S16 digital snake, the latter of which is based on Klark Teknik AES50 technology, which allows the user to get all ins and outs on stage over a single Ethernet cable.

"The USB FireWire 32 x 32 interface makes the X32 a great all in-one solution, whether you're on stage or in the studio," insists Behringer's Product Specialist, John Dinicola. "It packs the features of a much larger console, and is a true game-changer for the company, as it truly brings together all the vision we have in design and manufacturing products, whilst maintaining a high level of quality."

And Behringer isn't stopping there. Like several other manufacturers have done in recent times, it has chosen to undertake a major North American tour to promote and demonstrate its new product courtesy of its X32 touring van, which, incidentally, was parked up adjacent to the Behringer stand for the duration of the show.

"We'll be taking the van to all of the major cities in North America, as we've had requests from dealers and contractors to do demos of the console in person," confirms Jonathan McCune, Department Manager for live sound at Music Group. "So we have the van fitted with a number of consoles that will all be interactive within the demo, as well as our P16 systems, S16 stage boxes, and even our new ELX line array system, so people will be able to experience the full Behringer ecosystem right on their doorstep."

The console will be available from July 27, 2012. AM

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Commercial Installation Series

There's a brand new range from Yamaha for installation sound – Audio Media finds out what's whar.

Yamaha used Infocomm as a launchpad for the CIS series, a brand new range of audio products for the installed sound market. The Commercial Installation Solutions (CIS) series is designed to provide a complete system solution for situations where there isn't an experienced audio operator available to manage the system. The first Yamaha CIS products include matrix processors, multi-channel amplifiers, ceiling speakers, and surface mount speakers. Using Dante technology and Yamaha's YDIF cascade bus, users will be able to share audio and connect with all Yamaha CIS products, as well as other professional audio products on a digital audio network. The YDIF cascade bus provides a simple intra-rack connection using Cat5 cable, while Audinate's Dante technology allows CIS systems to share audio with up to 40 subnets, using an Audinate Netspander. The idea behind this is that it will allow CIS systems to merge with other complex audio systems simply and efficiently.

The CIS series features two programmable DSP matrix processors. The MTX3 is an 8x8 analogue unit with YDIF cascade bus and SD Playback for a 26x8 matrix. The MTX5-D is an 8x8 analogue unit with YDIF cascade bus, 16 channels of built-in Dante, SD Playback and an MY card slot for a 26x16 matrix. Both units feature parametric EQ, feedback suppression, auto gain control and priority ducker. Outputs include delay, parametric EQ and speaker processing. Optional wall-mounted controllers provide simple control of functions including preset recall, levels and SD card playback, while a Wireless DCP app will be available for iPhone or iPod touch users. Also available are Exi8 input and Exi8 output expanders that can be controlled remotely from an MTX processor via YDIF, using Ethernet cable.

Also included in the new range are four multi-channel amplifiers – the XMV4280, XMV4140, XMV4280-D and XMV4140-D. The amps are available in either YDIF or Dante versions, can be used in bridged mode, and can be controlled remotely using Yamaha MTX software.

The CIS series also has two new ranges of loudspeakers. The surface-mount VXS Series features two IP45-rated, full-range models, VXS5 and MXS8, for both indoor and outdoor applications, plus two subwoofers, VXS10S and the transformer-fitted VXS10ST. The VXS full-range models are equipped with dedicated bracket for safe, easy speaker installation, and can be mounted temporarily to free up hands for adjusting mounting angles. The subwoofers also feature brackets for quick, easy mounting.

The first products in the CIS series should be shipping at the beginning of the autumn.

....

INFORMATION

£ TBA
Ⓐ Yamaha
Ⓦ www.yamahacommercialaudio.com

The legacy continues...

In 1987 Focusrite, then owned by Mr Rupert Neve, introduced the ISA 110 wide bandwidth Microphone preamplifier and EQ module, designed at the request of Beatles producer Sir George Martin for the custom Neve consoles at his AIR Studios in London and Montserrat.

Like all ISA Range products ISA Two specs out beautifully!

- EIN is -127dB (at 60dB gain, 150 Ohm source impedance).
- Noise at main output is -97 dBu (22Hz-22kHz bandpass filter).
- Frequency response at 60dB gain -2.5dB at 20Hz., -3dB at 120kHz.

This was the genesis of the Focusrite brand and an uninterrupted progression of the ISA family from then until now. The ISA (Input Signal Amplifier) microphone preamplifier, featuring a Lundahl input transformer and proprietary Zobel network, has remained essentially unchanged and at the heart of every ISA Range product and of course the famous Focusrite Studio consoles.

Announcing the latest chapter in the ISA legacy, ISA Two.

Responding to numerous requests Focusrite is pleased to offer two channels of this highly praised mic pre in a 1U, 19" rack-mounted format. The only things we've added to the original design are four switchable input impedances, balanced inserts and two useful user-calibrated eight LED output meters.

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IsoAcoustics ISO-L8R155

ALISTAIR MCGHEEE has reservations about the flexible approach to isolation but, as it turns out, IsoAcoustics *does* float his boat...

Ivor Tiefenbrun founder of Linn products and father of the LP12, pushed the Linn Isobariks (DMS I think not PMS – but it was a long time ago) off the carpet and on to studs fixed to the floor in the Linn dem room. I was visiting the factory as a loyal employee of Eulipion Audio, Manchester's finest HiFi emporium. Ivor was demonstrating that allowing your speakers and their stands to wobble was detrimental to the sound. With the Isobariks' stands resting on the studs, I felt he made the point well, but not everyone agreed – then or now.

At Linn products they had a very precise scale of tightness: tight, f*****g tight, Linn tight, and broken. Thus the world of HiFi was deluged with new super-rigid stands and compliance was a bad thing.

But as I said not everyone agreed, I remember the guys from Mission getting very excited about sorbothane pads, that, placed under your speakers, would decouple them and therefore improve the sound. Good luck decoupling Isobariks. In the words of Roy Scheider, 'You're going to need a bigger pad.'

With that history behind me it was with some trepidation I unpacked the IsoAcoustics ISO-L8R155 speaker stands (genius name – hereafter referred to as 'the ISOs'). They are designed, if required, to raise your monitors when used with a typical DAW installation built around a bit of PC furniture that would otherwise leave your speakers a bit lower than you would ideally want them. My Tannoy Reveals have been in just such a position and so provided an ideal test bed. The ISOs reckon on supporting speakers at less than 30lbs each (so not Isobariks) and looked a touch on the diddy side under my Tannoys.

Using the supplied tubes and spacers the ISOs are able to raise your game by either 3-inch or 8-inch depending on the choice of tubes and tilt your monitors either back or forward by about six degrees. If you need different horizontal dimensions, they are flanked in the IsoAcoustics product range by another two models, numbered L8R200 (biggest) and L8R130 (smallest).

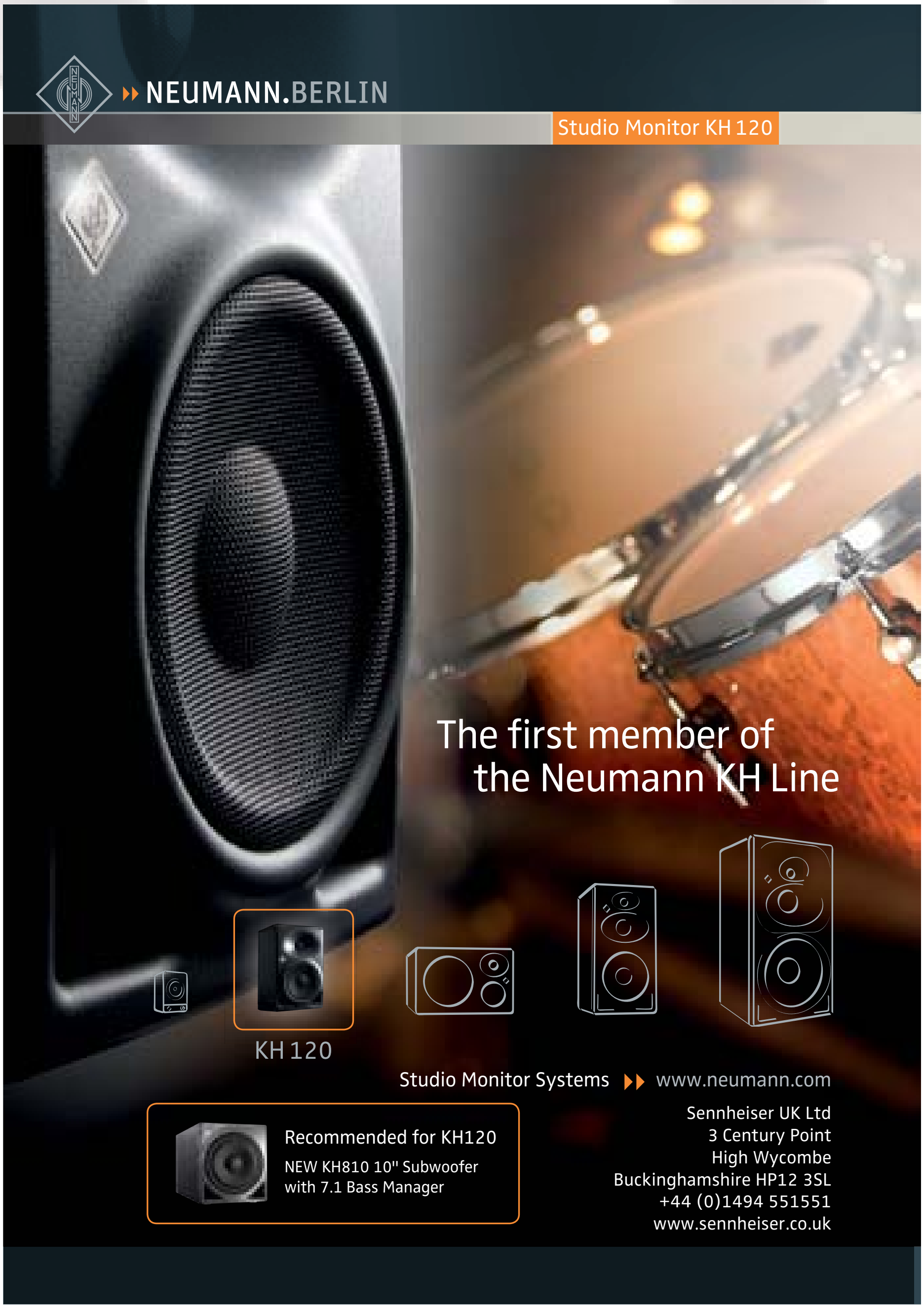
Assembly is pretty straightforward. If you can't do it unaided, then under no circumstances should you attempt to open a tin of corned beef.

As you've probably gathered, I wasn't expecting much, but as it turns out, they worked for me. Another octave in the base, 3D holographic imaging, a mysterious sense of oneness with Dave Edmunds and Billy Bremner, well maybe not. I just felt I was getting more, backing vocals sneaking out where I hadn't noticed them before. Instruments that had been hiding now shyly peeking through the mix, and dare I say better imaging. Now – the why?

Could it be because I'm now on axis for the tweeters? Yes it could. Could it be because in the words of IsoAcoustics, 'patented isolation technology allows your speakers to 'float' in free space'? I have no idea. All I can say is I've been using the ISOs for a month now and they still bring a smile to an old flat-earther's face.

INFORMATION

- **£ IsoAcoustics ISO-L8R155 £89 inc VAT.**
- **Ⓦ www.isoacoustics.com**
- **Ⓐ UK Distributor: SCV London**
- **Ⓦ www.scvlondon.co.uk**



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DYNAUDIO DBM50

Desktop Active Monitors

It's all to do with angles, you see. JERRY IBBOTSON takes a perfectly aligned view of the these new Dynaudios.

It's not often you start to form an opinion of something based on the arrival of the delivery man. But I have to say when the nice courier chap arrived at my door with the DBM50s, I was slightly agog (if that's even a word). I'd seen the new Dynaudio speakers previewed in *Audio Media* earlier on in the year and was excited to learn that the Danish firm were making some monitors specifically for desktop use. In the PR photos they looked compact. Perfectly proportioned to sit either side of my laptop.

However, my definition of desktop and Dynaudio's differs slightly, hence my surprise when the delivery driver heaved two large boxes out of his van. When I unpacked one my wife's response summed it up: "Whose desk did they have in mind exactly?"

You see, these are fairly big speakers compared to what I'd been expecting: 335mm high to be precise. That puts them on a par with many compact studio speakers that you'd happily put on stands or even soffit mount. But that's not the point; what makes the DBM50s special is the angled front face. It's tilted upwards, directing the 28mm tweeter and 180mm at the user's ears. The idea is that they can be placed directly on the desktop or working surface, for use in more confined spaces.

Overview

Their specification is as follows: 50 Watts of power each to tweeter and woofer, frequency response from 46Hz to 21KHz, 1.5kHz crossover frequency, an MDF cabinet, XLR balanced and RCA unbalanced inputs. On rear of each speaker are the inputs and switches for a range of controls. There's an input level selector (+4dB and -10dB), a high-pass setting for those using a separate sub, an LF boost/cut, a MF cut, and an HF boost/cut. These allow for simple adjustments according to environment; for example, dialling back the bass if they're placed close to a wall.

There's also the main power switch, mains input (a figure of eight lead rather than kettle plug) and a Sleep Mode switch, which puts the speakers in power-saving mode if there's no input signal for twenty minutes. It takes two seconds for them to wake up again.

In Use

My source was a Focusrite Saffire Pro 24 running off a VAIO laptop, which handily has a Monitor knob on the front. There is an optional and very

THE REVIEWER

JERRY IBBOTSON has worked in professional audio for more than twenty years, first as a BBC radio journalist and then as a sound designer in the games industry, working on more than 30 titles. He's now a freelance audio producer and writer.

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posh-looking dedicated volume controller for the DBM50s, but this wasn't available for the review. I used the XLR inputs rather than the RCAs. The environment in which I was testing usually contains a pair of Genelec 8020s, small speakers that still produce an impressive sound. This is not my studio but my home-working setup.

The first thing I did when I had everything in place was to play some familiar music through them. I'm not a musician myself but playing something I've heard many times over is a great way to set a benchmark and makes me feel like a hi-fi reviewer.

A track I've recently fallen in love with is Hollow Talk by The Choir of Young Believers – the theme music to the Scandinavian crime drama *The Bridge* that ran on BBC4. This has a guitar and piano section, a full-blown orchestral section, and some haunting vocals.

I've played this track so many times it's starting to annoy my wife but it was given a whole new lease of life through the desk-bound DBM50s. Though they were fairly close together and in close proximity to me (my desk isn't that big) there was still a cracking stereo image and incredible detail to the sound. As I was hoping for, I heard detail that I just hadn't picked up before. The baby 'Gennies' had always done a sterling job but the larger Dynaudios (as well they should) lifted the track hugely.

I then ran through various familiar bits of music from different genres including rock, classical and folk. This had stopped being a test and was just a chance for me to enjoy some music. There was more detail, smoothness, and punch than I'd heard before. This wasn't a jaw-on-the-floor moment, as I've had with other speakers that I've tested, but it perfectly suited my listening environment.

I then played back some interview material that I had recently recorded for a project, using a Roland R-26 and Rode NTG3 mic. Now… this was a jaw/floor interface moment. I'd been listening to his material over and over on both speakers and headphones and I'd never heard it sound this good. What it did was prove how good the R-26 – my current favourite small recorder – actually is. The voices were stunningly reproduced.

Conclusion

Maybe a set of normal right-angled speakers could do the same job, but you'd have to mount them either angled, or high enough for alignment with the ears – an issue that ruins many desktop monitoring situations, though does offer a useful existence for those encyclopaedia volumes. My own Genelecs have a rubber base that lets you tilt them upwards, but this is not a common facility.

I can imagine a lot of scenarios where the DBM50s would be of great use. If you were editing video and needed excellent sound reproduction, these could be just the thing. Small voice studios and radio production environments could also put them to great use.

But they are truly cracking speakers and should definitely be on your short-list. Just make sure your desk is big enough. AM

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INFORMATION

£ **Dynaudio DBM50 £405 each + VAT; Monitor Controller £55 + VAT.**

W **www.dynaudioprofessional.com**

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FOCUSRITE ISA TWO

Two-Channel Mic Pre-Amp

The Focusrite ISA Mic Amp range used by producers and engineers worldwide gets a new form factor – a dual-mono 1U rack version, called ISA Two. ALAN BRANCH takes to the mic...

Focusrite
Dual Mono Mic Pre
ISA Two

Mic amps can be simple – take a low signal and boost it to standard line level – yet the variety of mic amps for sale seems complex, with so many circuit designs and buzz-word features. It's easy to see why people can get so stuck when it comes to this crucial piece of hardware. Fortunately, Focusrite has stuck to its tried and tested heritage with the ISA range, releasing the ISA One a few years ago in a new smaller affordable package for the growing project studio market. Here we have the same high end mic amp but as a dual channel version with a few minor changes.

The ISA Two comes with the traditional blue and grey colouring and chunky knobs. It's good to see such a classic in a simple 1U rack. The ISA range has kept to the same circuit design that Rupert Neve created when he was originally commissioned by George Martin to create a super-clean mic amp for his Neve console. That was the original ISA 110 module. And that 110 setting is still there in the new ISA Two, but with four switchable impedance settings, giving us creative options when recording with different types of mics. This versatility in colouration means you can choose the character sound to match your mic. It's ideally made for todays creative engineers and project studios covering so many different recording types.

Overview

The ISA Two is split into two identical channels, offering up to 80dB of gain, 20dB via its original Lundahl input transformers, and 60 dB via the input stage. This circuit design with Rupert Neve's clever use of a Zobel network, insures maximum gain with minimum noise whilst achieving a very flat frequency response. Having balanced XLR and jack inputs on the rear it can accept both mic and line level inputs, while the front offers two high impedance instrument Di inputs. There is also switchable insert with send and return inputs via TRS for adding a compressor or EQ. There is no digital option, which some might find off putting, but I think given today's rich quality of A/D convertors found in a majority of DAW I/O interfaces, it's right to omit that now, and it helps keep the cost lower and the circuitry pure.

The familiar Blue ISA face plate is really well laid out: a switchable input source for mic, line or instrument; the all important impedance 'Z' switch featuring Low (600Ω), ISA 110 (1.4kΩ), Med (2.4kΩ), and High (6.8kΩ) settings, a phase reverse switch, and input selection. Then come the three main controls I like to see on a mic amp – the main gain selection (switchable form 0-30dB or 30-60dB), a trim control with 20dB range, and a high-pass filter. The importance of the size of the knobs, their placement and the uncluttered interface is the crucial point here. I have done many sessions where time is tight and you need to setup the mic level quickly, being able to dial in the main gain then use the trim control to manage loud sections during a recording can be essential – as is the extra benefit of rolling out any rumble or foot stomping with the high pass. This design shows thought has gone into the end user operation and how best to make it easy and professional, a factor many manufacturers tend to forget.

Summary

In use the ISA Two is suited to all manner of recordings, perfect for the end of the garden studio, the pro studio, even the live gig. There are two channels but no stereo link, however matching levels with the well laid out controls and meters is no problem. The impedance switching is more noticeable on low-level ribbon or dynamic mics, switching a Shure SM57 to a low impedance helped fatten some percussion recording, while brass sounded excellent with one of the low cost SE Ribbon mics. Using a high end condenser vocal mic, it sounded perfectly clean and natural: its warm colouration is slight but it is there.

One of my favourite features was an output meter calibration, which helps line up levels with your DAW inputs – this means you no longer have to watch the record levels on the screen. It's a simple function, but user features like these make such a difference when doing an important recording and you need to rely on your gear.

The ISA Two's well designed, user-orientated interface with no frills and superb sound quality means it's definitely one to consider if you're after a cost effective but high quality mic amp.

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INFORMATION

£ **ISA Two £699.99 inc. VAT**

Ⓐ **Focusrite Audio Engineering Ltd, Windsor House,
Turnpike Road, High Wycombe, Bucks HP12 3FX, UK**

Ⓦ **www.focusrite.com**

THE REVIEWER

ALAN BRANCH is a freelance engineer/producer and ex-member of the On U Sound Crew. His long list of credits include Jamiroquai, Beverley Knight, M People, Simply Red, Depeche Mode, Shed 7, Sinead O' Connor, Bjork, and Sade. www.alanbranch.com

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UNITY AUDIO THE ROCK MK II

Active Studio Montior

NIGEL PALMER finds The Rock MKII a chip off the ol' Boulder. With its newly extended bass response it might be just what you need.

In the past when I've reviewed a range of loudspeakers from the same manufacturer, I've generally started at the smaller end and worked my way up. Having recently looked at Unity Audio's excellent Boulder active three-way, I'm now going against the tide by covering the smaller Rock. There's good reason for this, however: after more than two years on the market, Unity has tweaked what is already a successful design to Mk II status with some added refinements. More on this later, but for the moment existing Rock owners will be pleased to hear that there's an upgrade path if required.

Overview

The Rock is an active two-way loudspeaker measuring 325 x 220 x 290mm (HWD), weighing in at 11.2kg and designed by Kevin Van Green. Driver complement is a single 180mm (7-inch) aluminium and pulp fibre-coned woofer together with a folded ribbon tweeter, both supplied by ELAC, recessed into an attractive Corian front baffle. Cabinet construction, as with the Boulder, is in Baltic Birch, though in this case a thinner 12mm form has been used. The amplifiers, one 75W for low frequencies and one 25W for high frequencies, are again from Esoteric Audio Research's Tim de Paravacini. The enclosure is of the sealed infinite-baffle type, so no ports contribute to the LF response: bass rolloff is a gentle 12dB per octave as opposed to the steeper 24dB one would expect with a port, resulting in meaningful very low frequencies from a surprisingly small box. A look around the back of the loudspeaker reveals an input level control, XLR (balanced) and RCA (unbalanced) inputs plus mains inlet. What's not provided, in contrast to The

THE REVIEWER

NIGEL PALMER has been a freelance Sound Engineer and Producer for over 20 years. He run his CD mastering business, Lowland Masters (www.lowlandmasters.com) from rural Essex where he lives with his family and two dogs.

A Ribbon Revolution
...the rules have changed

There's a revolution underway in recording studios and on live stages stretching far and wide across the UK and beyond.

Renowned producer and Chairman of the Music Producer's Guild, **Steve Levine** has added his voice to a chorus of unswerving praise aimed directly at Audio-Technica's revolutionary **AT4080** and **AT4081** Ribbon Microphones:

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Steve Levine

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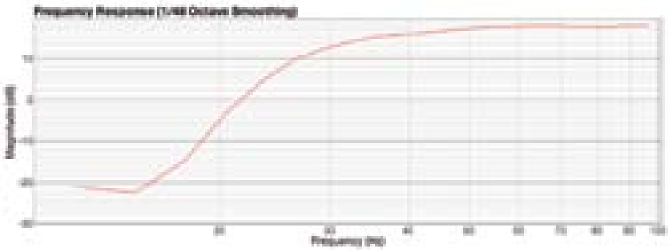

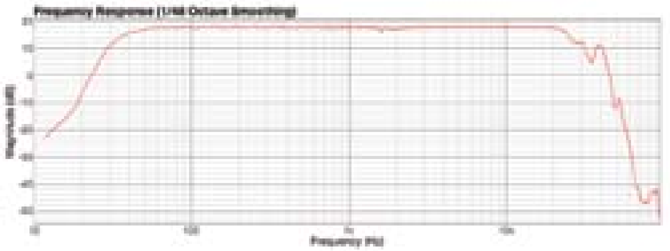

Boulder, is a means of adjusting The Rock's frequency balance to suit different rooms – it's an interesting debate in itself as to how far you trust a manufacture to make good decisions on your behalf, but with sensible positioning I found no need to tweak the speaker's response during the review period.

In Use

So what does the 'Mk II' designation mean in practice? To quote the manufacturer: "A significant development has come from the shared low frequency amplifier design that we use in the Boulder. We altered the feedback loop in the LF amp module and saw significant bass extension. We decided to try this in The Rock and it produced the same benefits and so The Rock now has a bass response of 33Hz at the -3dB point instead of 50Hz."

In combination with a -3dB point of 25kHz at the opposite end of the spectrum that's an eyebrow-raising specification for such a small monitor, particularly in the low end, and I had to hear it for myself. I went through the usual set-up procedures to plumb my review set of Rocks into the Lowland Masters system in an approximately 2m triangle (as with The Boulder, a good solid set of stands is a must) and then organised wide-ranging listening tests with both CD and higher resolution material over a period of several days. The review units had already been run-in to loosen up the bass drivers.

My immediate impression was that the speaker's voicing and balance was very nicely implemented, being a long way toward that holy grail of the loudspeaker designer by offering accuracy while being enjoyable and non-fatiguing to listen to. Driver integration was commendable: while I believe I could hear a minor 'something' going on around the 2.7kHz crossover point, this was much less of an anomaly then I've found typical in other two-way designs. Proof of the pudding in that regard was how very well The Rock worked on speech, a useful test for showing up the general presentation and particularly the mid-range ability of a loudspeaker – although possibly principally aimed at music recording and mixing, I could envisage The Rock doing a good job in post-production rooms because of this. Imaging was commensurate with other aspects of The Rock's performance, and as one would expect with any loudspeaker dubbed 'monitor' both the good and not-so-good aspects of the audio being played were clearly shown. The Rocks can also play surprisingly loud if required, a tribute to, among other things, Mr de Paravacini's no-nonsense approach to amplifier design

What of the low-end performance? I think it's fair to say that I hadn't previously experienced as much low frequency information from a sealed box of this size, in fact at first it was hard to believe that something so diminutive could create such a big sound. My usual mastering speakers coincidentally also have a 33Hz- 3dB point and although they do sound more refined than The Rocks, Unity's product comes breathtakingly close to their presentation at just over a quarter of the current model's price – an outstanding achievement.

Conclusion

In a marketplace not noted for a lack of small two-way active loudspeakers The Rock must be among the better-conceived ones available; the Mk II changes also make a genuine real-world improvement to the performance, and are not some advertising copywriter's invention. Punching notably above its apparent weight, class-leading, well-priced British products such as this are in my opinion just what professional audio content creators need. AM

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INFORMATION

Ⓛ **The Rock MkII GB£1850 + VAT per pair,**
Upgrade from MkI to MkII GB£65 + VAT per pair

Ⓐ **Unity Audio Ltd, The Elms Barn, Baythorne End,**
Halstead, Essex, UK CO9 4AF
Ⓦ **www.unityaudio.co.uk**

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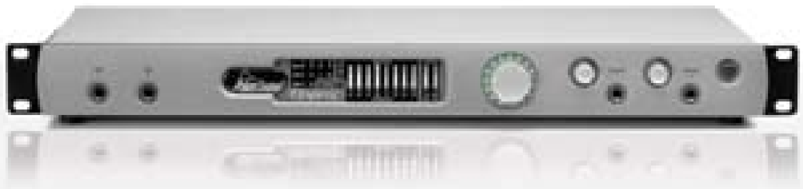

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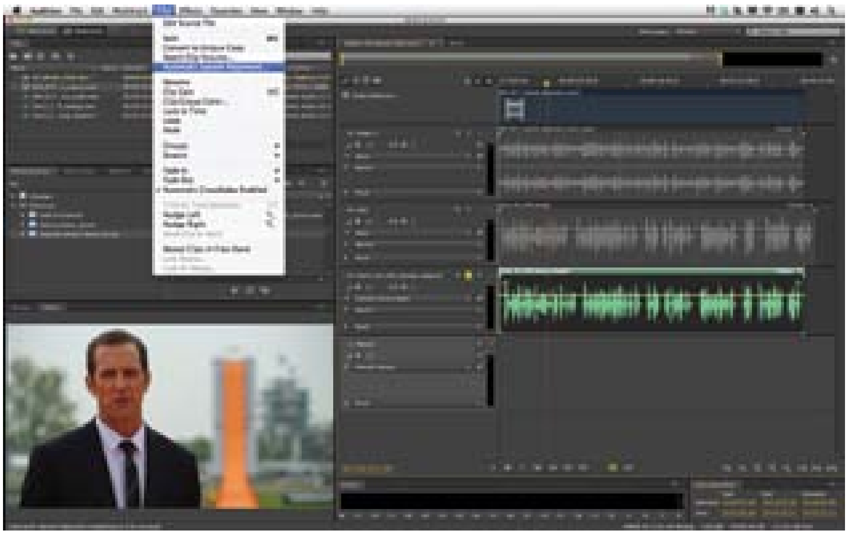
AUDITION CS6

DAW Update

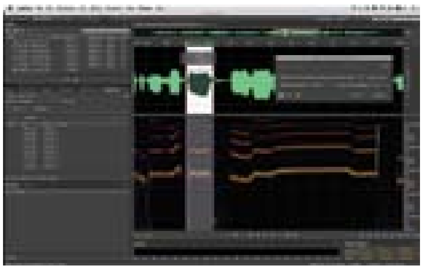
Previously, it seemed as if Adobe had lost some important bits of Audition down the back of the sofa. It's now found them again – made better. JERRY IBBOTSON reports.

It's probably the height of vanity but I've just been reading one of my own reviews in *Audio Media*. There is a practical reason for this. Last year I reviewed the shiny new version of Audition – Adobe's DAW. This was a complete re-write of the multi-track mixer and editor that has been around in various forms since Cool Edit Pro back in the 1992, when I started using it. It had been rebuilt from the ground up and for the first time was available on the Mac.

The problem was that while it ran better than ever and looked all-new and shiny, a whole stack of features had not been carried over from the previous build, Audition 3.0. This made a lot of existing users understandably angry, and disappointed a number of people who'd been eagerly awaiting its arriving in Mac format. I had an email from a former BBC colleague, Micky Curling, who said he'd be holding off buying it until the missing features were put in.



Well Micky, if you're reading this I can confirm that by and large they have – which is why I've been re-reading my review from last year. I said, "There's an awful lot missing from version 3.0. Key things have not been carried over, like being able to preview-play files before you open them."



Overview

Well, there's now an excellent Media Browser that not only shows up the icon for your various drives as they appear in your OS (Windows or MacOS) but allows full previewing including auto-play and playback looping. The reason it is a separate browser pane within Audition itself, rather than the old method of using File/Open is to take into account the different operating systems it now runs on. You can filter contents and add shortcuts. So I can, for example, save a direct link to my FX archive.

This is basically what's happened with a whole stack of features that Adobe said it couldn't fit into the development cycle last time round (to which I blew an enormous raspberry). It's added them back in but with a twist, creating something new to make the function even better.

Take Grouping for example. Last year I was pretty livid at its omission: "If you need to shorten or lengthen a mix, you now can't lock your elements together before you drag them left or right. This is already caused me a major headache on a project for my biggest customer." Ladies and Gentlemen, may I introduce you to Adobe Audition's new Grouping feature, bigger and better than before.

Locking a stack of clips or samples in the multitrack together is as easy as it used to be but what's been added is the ability to alter a set of grouped clips. In version 3.0 (and before) if you wanted to remove one clip from a number than you'd grouped together, it involved some careful finger work as you Ungrouped, clicked on the one you wanted to take out to deselect it, and then Grouped again. If you clicked away and the clips were no longer selected you had to start again.

It now works like this. Right click on the clip/sample you want out of the group. Click 'Remove from Group'. Done.

Even better is the ability to re-jig a stack of grouped clips without then having to scoop them all back up again. This is called Suspend Group. Let me illustrate it with an example: I've been working on a radio style CD project, producing five short programmes with interviewee clips and recording studio links. The producer had already done some basic editing of the interviewees in the Multitrack (non-destructive edits) and had grouped together the resulting 'bits' of clip. But these needed some tidying up so I took over (ooh, get him). I didn't want to Ungroup everything so I switched to Suspend Group (CTRL Shift G in Windows). The clips stayed coloured-in to show that Audition new they were still working together but now I was able to shift ins and outs and even change the order of clips if need be. Then, without having to click on any of them, I hit CTRL Shift G again and they were locked together once more.

For me, as a long time user, this is as much about smoothing out your workflow and making life easier and quicker as it is about adding extra functionality. I found myself repeating this process over and over along the full eighty minutes of my mixing sessions.

Other "back with a bonus" features include Preview Edit. In Audition 3.0 I found this a bit unreliable, but when it worked it was great to be able to play either side of a selected area to show what an edit would sound like. In Audition CS6 it's now a dedicated button on the transport controls (far right). Click here and you can now preview any edit in either the Edit or Mulitrack modes. So if you're in radio and a producer says, "can you we lose twenty seconds from that mix?" you can hear what it will sound like before you hit Delete. And of course, there is the Ripple Delete function that will cut out whole chunks from the Multitrack and close up the gap, even moving Marker if you ask it nicely.

The list of added features is long and includes Clip Stretching and the excellent Voice Align, which automatically syncs newly recorded dialogue with existing material. Yes that's right, Audition now does ADR. CD creation is back in, to a professional standard. You can drag wav files into the CD pane or simply use markers that you've laid out on your full mix.

Conclusion

For old users who held off upgrading it's now seriously worth taking a look. And for Mac users who've never used Audition before, there are more reasons that ever for trying out what has always been a hugely underrated DAW package.

THE REVIEWER

Jerry Ibbotson has worked in professional audio for more than twenty years, first as a BBC radio journalist and then as a sound designer in the games industry, working on more than 30 titles. He's now a freelance audio producer and writer.

INFORMATION

£ Adobe Audition £278 ex VAT. Upgrade from £59.57 ex VAT. Subscribe from £14.29 ex VAT. Also available as part of selected CS6 bundles.

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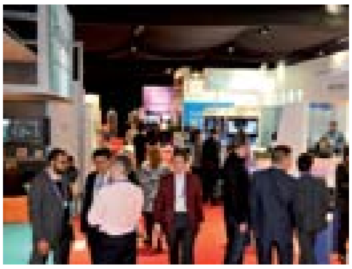

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On Root for Develop

As Codemasters' audio head honcho prepares for his DEVELOP Conference keynote address, Audio Media (conference media partner) catches up with him between sessions to ask about about the man behind the message.

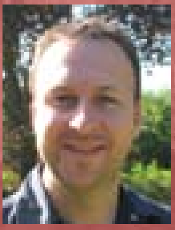
Stephen Root began his pro-audio career following in the footsteps of his father as a jazz pianist. He went on to set up his own commercial studio, with a diverse output, including talking books, sound design, TV themes, library music, and pop. But it was an old school contact, Joe Bonnar, then heading up development at video game developer, Probe Entertainment, who first invited him to pitch music for games.

Following a commendation from Fox Entertainment for his music for Probe's *Alien* Trilogy, and then the *Die Hard* Trilogy series, Root finally decided to focus on games, going in-house full-time. Around the year 2000, he jumped ship to Criterion to set up audio for both the software and games development arms of the company. There he worked on every title in the legendary *Burnout* racing game franchise, as well as other notable titles such as *Black*. Halfway through his eight-year stint, the company was bought by Electronic Arts where he spread his wings, connecting into the EA Worldwide Audio Council and helping other areas in UK audio provision. In 2008, he was hired by Codemasters for an all-encompassing role overseeing audio provision across a multitude of titles.

As he arrives at Develop in Brighton on Thursday, July 12 to keynote the one-day audio track of Europe's premier game development conference, Root will be fresh into a brand new role at Codemasters, overseeing a development creative services team, amalgamating both audio and art to push forward successful racing game franchises such as DiRT as well as the company's current F1 offering – a remit covering some 200 development staff from Birmingham to Kuala Lumpur.

With Root's wide-ranging experience in video game production, Develop delegates can expect to benefit from an engaging keynote presentation and interview where he will share from a rich and diverse track record about the business and creative factors that inform his modus operandi and drive a continuing commitment to video game audio excellence.

In a wide-ranging retrospective, he will discuss his approach to creating sound effects, music, and speech for interactive entertainment and his belief in focusing on defining key elements that will have a lasting impact on both consumers and industry pundits alike. Topics explored will include the big wins an audio team can make by smart application of creative time, effort and energy to deliver memorable audio moments, together with the need for clarity in the audio manifesto for current gen development projects. In a world where massive channel count, real time processing and extensive memory are available, how should developers avoid 'me too' cacophonous overkill in favour of focused quality high-points? Root will also explore how people connect and communicate and the vital and perennial importance of deep and early involvement with other disciplines, most notably, design.



When quizzed about the potential for migration of talent from other audio industries, Root is most excited about young innovative sound effects creators who are hungry to generate the most interesting new sound design treatments, bringing revolutionary ideas to the industry in a commercial world where gaming is changing faster than ever before – from major console titles through to smart phone apps where sound capability may be limited but where every sound effect must count.

Meanwhile, he fully recognises the potential for the world of games production to connect readily with top class mixers working on cinematic sequences as well as music mastering engineers to ensure overall sound fidelity is top notch.

www.developconference.com

Prototype 2 – It's a Wrap!

Respected game audio practitioner, Rob Bridgett, has recently completed work on Radical Entertainment's latest *Prototype* title. Bridgett, widely known for championing the art and craft of video game mixing (including his web offering gameaudiomix.com) has again ensured that post-production planning and thinking is built into the DNA of Radical's audio department.

Bridgett: "All roads lead to the final mix, which is an established milestone production date we call 'Sound Beta'. This informs our approach to pre-mixing and quality control of content throughout the entire production. Using a single voice director/producer was a cornerstone with all voice production passing through one studio, adhering to solid levelling and dynamic range for total consistency. The resultant assets dropped directly into the game without further mastering or tweaking. This horizontal approach was also applied to music with all content developed in-house using consistent templates and sessions, eliminating much of the need for deep re-mixing and re-mastering.

Sound design elements were similarly given ownership horizontally, one person owning weapons and UI sounds while another owned ambience, physics, collisions et al. Having our 'Sound Beta' enables time spent mixing our games at the end of production – time specifically set aside for us to get picky on the final balance in a controlled, relaxed environment in our in-house purpose-built mix stage over the project's final three weeks. Through three stages, we get the overall output levels right, playing through the entire game, either tweaking faders in real-time or making adjustment notes to address specific sounds and voice files off-line, and finally, checking various mix configurations, mix-downs and supported output formats across the various consoles.

Going in-house with almost all audio content creation, combined with our audio milestone planning helped shift focus onto quality and away from scrambling to get sound into the game.

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FINAL CUT

LA Noire

JOHN BROOMHALL talks to composer team, Andrew Hale & Simon Hale, plus writer/director Brendan McNamara, about creating the BAFTA-winning music for this superb game.

LA *Noire* is a video game tour-de-force. With impeccable production values throughout, it's renowned for a deeply atmospheric, immersive gaming experience, excellent writing and some of the best facial animation seen to-date in games – players can make judgements about whether interviewees are lying partly by watching their faces. In a video game.

Set in 1950s Los Angeles, it tells the story of a group of characters just back from war. Main protagonist, Cole Phelps, makes his way up through the ranks of the LA Police. Something of a war hero, with a strong moral core, we follow his journey of discovery that, along with the post-war boom and explosion of culture, California has a decidedly seedy underbelly of corruption.

The Composers' Perspective

For composers Andrew Hale and Simon Hale (not related), LA Noire provided an opportunity to tap into a rich jazz heritage as they set about musically capturing a sense of unease and corruption lying beneath the shiny surface of boomtown 50s LA.

The two maestros had first worked together in games on Sony's *The Getaway* circa 1998. Meanwhile, Project Director Brendan McNamara, had gone on to form Team Bondi, the Aussie-based developer behind *LA Noire*.

Andrew Hale: "It was obvious from the get-go that with the 'Noire' connotation, the score would benefit from a rich jazz orchestral approach and I knew right there that Simon would be an integral part of that. First came a jazz session which I wrote and scored, featuring a sextet of amazing players, mostly from the States, but led by a very fine British trumpeter, Gerard Presencer. This initial session created the motifs and themes which would feature heavily in the game. Soon after, Simon got involved creating much richer orchestral arrangements of them. All the time, Brendan really pushed us both. He had a clear vision for a very major symphonic orchestral score."

Simon Hale: "We don't spend hours and hours in the same room at the same time when we're collaborating. We work separately to a shared vision".

AH: "We took a very cinematic approach – a very strict one. It was fantastic that the game team supported that. Many games call for action-based music full of drama. We wanted to have music that actually developed more slowly with more space. There was a certain risk in that approach, especially dealing with the idiom of jazz that a lot of game players may have no interest in. Our argument was, we were serving the story and therefore the game player, and everything else would come with that. In any case, it's a slower paced game with investigation. You're looking at facial capture and deciding whether people are lying or telling the truth. Quite groundbreaking – and musically, we did want to do something that actually stood out."

SH: "A lot of it's down to the crew putting the music into the game afterwards as well. We've got them to thank for placing the music well and choosing the right things because we were allowed to be quite free in terms of creating musical textures and tapestries that were then used in ways we didn't necessarily expect...."

AH: "We trusted Brendan absolutely. Video games are very different to movies. It's not like you have a finished edit, or even a working edit. It's hard to immerse yourself in a scene when you have an early version of the game with technical issues yet to be resolved. We also supplied groups of specially developed sounds that could be used for clues and hints that the player gets during investigations - like a vibraphone gliss or a small section from a clarinet melody, or a piano hit; and we also made loop versions of certain atmospheres to enable the music to grow in tension, say in an action scene through branching - or reducing tension if you went away from the action. But even with these requirements, as Simon says, it was still relatively free.

"There are three main elements to the music. Firstly, the initial jazz recordings which are a very straight ahead sextet playing the basic themes plus some fantastic improvisation (recorded at Metropolis Studio B), then you have the orchestral music comprising two sessions. One based on the existing themes with orchestral embellishment and the second session, which I think was the most rewarding all round, was Simon starting off with some of the motifs but with a much freer approach, creating a whole symphonic score that moved well away from the jazz in places, providing the real body of that dramatic orchestral score you hear in the game."

AH: "We were really chuffed about the BAFTA. We tried to make the music as good as we possibly could. Being given space by Brendan to be completely creative... meant our music sounds very organic and natural – and hopefully, that's the quality that's come across and been recognised by BAFTA."

SH: "It's amazing the value BAFTA brings to the games business. We all know it's a huge industry now but to have those awards given to games with that kind of recognition and exposure, is fantastic."

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THE DIRECTOR'S PERSPECTIVE

Brendan McNamara: "For me personally the music is as important as the graphics. If you had your eyes closed the music would still evoke the sense of time and place and especially the mood that we were after with the game. I usually speak to Andrew about the music before we even begin. Certainly for the new project we are working on, Simon and Andrew have been involved from the very first kernel of the idea. Making a triple-A game is a huge artistic and technical undertaking and knowing I can trust these guys with the soundtrack is a huge relief for me.

"Andrew is successful as a musician because he can sit down at the piano and create a mood or ambience with just a couple of chords. For him it's just doodling, but for me and the rest of his fans it's very evocative. It's very evident in his work in Sade over the last 25 years. In a band, the melody is generally the vocal but he comes up with beautiful melodies too. The main piano theme from LA Noire is a beautiful example with the chords evoking the tragedy of the whole thing and the melody a kind of lament about futility.

"For LA Noire we originally worked on the soundtrack as an album. The approach was like Kind of Blue where Miles Davis had some chord changes and a very limited structure and then he brought in musicians to improvise over these changes. Andrew put together a great jazz ensemble in London for a couple of days of recordings and we came out of that with all of the great instrumental songs that were used in the game. The idea from there was to bring in Simon and orchestrate those ensemble recordings, which was something that we did do, but as beautiful as those recording were I didn't think they were right. The game is much more of an undertaking than an hour's worth of songs.

"People spend anywhere from 14 to 20 hours playing through it and I thought we had a pretty unique opportunity in terms of the game and the composers to use the soundtrack to tell the story of Cole Phelps, our protagonist through the music. If you listen to a lot of classical music this is what they tend to do. Grieg, Holst, Stravinsky, Shostakovitch - they're all telling stories as far as I'm concerned. So Andrew, Simon and I got together on Skype and discussed what it was I was aiming for - a kind of LA Noire Suite in five movements which paralleled the narrative of the game. I gave Simon a really simple list which talks about each desk in our protagonist's journey in the police force and a one line simple description of what happens to him in that experience. I think both Simon and Andy were a little bit shocked in terms of what I was after, but both Andrew and I thought this was a great opportunity for Simon to spread his musical wings and really show what he was capable of as a composer. Simon took all of the narrative themes that I put forward and all of the melodic themes that Andrew came up with and produced something extraordinary. Certainly the day it was recorded at Abbey Road Studios was one of the great days in my life. Just being at Abbey Road was pretty special but to see a composer at work with an orchestra on a new piece of music was a great privilege. Pretty much as it was recorded through the mics and mixed live is what made it into the game… and then there's the magic of the room at Abbey Road which looks like a high school auditorium but the sound was to die for. During the recording I got a spare chair and sat in with the orchestra and held my breath. What an experience. The Suite was recorded chronologically in sequence and at the end of the whole piece the orchestra all stood and applauded the composer. Amazing. I would really like to see it performed by an orchestra again. Who knows?

"…I'm very appreciative of the BAFTA Awards for considering us. It's the awards ceremony that I really care about because it is really well done and tastefully put together. We were up for a number of awards on the night and with the incredibly strong competition from all of the other great games that had come out that year I was not expecting to win anything. To hear the incredible cheer that Aaron Staton, the actor who played Cole Phelps in LA Noire received when he presented one of the awards was probably enough of a win for me but for Andy and Simon to win a Bafta for the soundtrack I couldn't have been happier. They're both great men as well as outstanding talents so it's nice for them to get the recognition they thoroughly deserve. As I mentioned earlier, I can't wait to see what they come up with for the new game."

Gaming Gain

Nugen's Jon Schorah explains to PAUL MAC what loudness measurements can do for game developers.

Loudness has been preoccupying the broadcast industries for sometime now, but is it also something that games developers should be concentrating on? Certainly game-to-game loudness could do with some consistency, and even game-to-DVD loudness on consoles is a source of annoyance to many. Sony, for example, is taking it seriously. Sony audio staff will be discussing game loudness at the Develop conference this month, and Sony Japan has 20 Nugen loudness meters already installed.

But there's more to be gained from attention to gain. According to Jon Schorah, Creative & Marketing Director of Nugen Audio, it can give you offer you coherence, inherently sound workflow, and creative guidance.

Paul Mac: Many games still exhibit some fairly basic coherence, mix, and loudness issues. What do you think is the problem?

Jon Schorah: "It's got nothing to do with the EBU loudness standards. I think that simply measuring loudness and defining some internal rules about relative levels of different components of the audio would fix that straight away – if people stuck to them. Simply say that if something needs to be audible above something else, it needs to be 'x' loudness units louder, while things that are supposed to be of similar level need to be within 'y' loudness units. Straight away you've got a kind of framework for objectively measuring things without having problems later on.

"I think one of the problems is that audio is produced in a very high quality environment so it sounds great. And that's just not the experience in the real world later on. Things become much harder to hear, subtleties are lost, and the whole audio experience becomes a bit frustrating. I don't know if you remember the BBC debacle with Professor Brian Cox's *Wonders Of The Universe* – how people complained they couldn't hear what he was saying over the music. If they had just said that background music needs to be 'x' loudness units below dialogue then they would have maintained a separation. That would still be preserved if the dialogue was quiet or if the dialogue was loud, so if the dialogue level was loud then you would have room to raise the background music level as well.

"I suspect when they mixed that in the edit suite it sounded great because they were listening in a silent, high-quality reproduction environment, and then when it all comes spitting out of a TV speaker

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that faces backwards behind the flat panel it's just not going to be that good."

PM: Are Loudness Units a good measure for game developers?

JS: "Yes – especially with their massive libraries of vocal clips. You can get yourself immediately in the right ballpark just by batch processing.

"Everyone is using archives of sound libraries and effects. Just say 'right, all the effects need to be roughly in this region' so anything that is way off is pre-corrected... As soon as you start to use it it's at the right level. Especially with dialogue because you're using voice actors, you've got placeholder stuff, then obviously things get chopped and edited and cut into all sorts of little clips. Just to batch process all of that for loudness instead of processing it to 0dBFS would be a far more sensible normalisation to choose."

PM: I read that you consider stereo separation and mono compatibility to be essential in the loudness and coherency discussion...

JS: "You can create space in the centre for the vocal by moving atmospheric sounds out of the centre. Then there's a perceived space in the centre that helps with dialogue clarity. It's used a lot in music production, such as where a vocal and a heavy guitar part constantly fight each other. You can move the guitar to one side or the other to create space. A lot of people use our Stereoizer as a widening tool just to create that space. It helps you to leave the level of the atmospheric sounds relatively loud, which obviously adds to the excitement. It's like producing a film score that can be re-mixed by the gamer constantly in any number of different ways. Somehow that has to maintain its excitement for the gamer who has a 5.1 system turned up to 11 and the little kid in his bedroom who's just using it on something like his Dad's old TV. It's a massive ask."

PM: In games, music is often treated in layers for a more dynamic mix. Does the Stereoizer maintain mono and phase compatibility in that case?

JS: "Yes. We spent a lot of time making sure it is properly mono compatible so that if it collapses down to mono you still get the original sounds back. I don't know if you've heard the stereoizers that use phase techniques and things – you end up with a funny little delay. Everything sounds slightly echoed – a bit reverberant. Or you get phasing so that string sounds suddenly sound as if they've got a phasor or chorus effect on them.

"There's been a perception, especially in the last five years that technology has somehow surpassed mono, but it hasn't. The most popular DAB radio has only got one speaker."

ME: Are the current loudness specs good enough?

JS: "Yes, I think they are. I think LRA is probably the one that's been given the least attention because it's not in any of the defined requirements. It's just something people are saying is a tool that you can use and might be useful, but I think it's quite applicable to game audio. The quality of the playback system and the background noise of the environment you're in depends how much LRA is going to be appropriate. So maybe even the LRA could be adjusted depending upon the context. If you're playing a game on the train you'd need a low LRA because the background noise is so high you're not going to be able to hear quiet things so you would need a relatively narrow range. But if you're playing at home, the kids have gone to bed and it's nice and quiet you could have a very dynamic mix... It could be a preset. In the same way we have EQ presets on music players, you could just have an 'I'm on the train' button. You just click that on and it reduces the LRA.

"Another great measure for the game industry is True Peak metering. Game audio has to be squeezed in the smallest space possible so it's always going to go through some compression algorithm to get it smaller. True peak metering stops that distorting. If you just use a sample peak to maximum level, lossy codecs come into play and you start to introduce distortion as you compress the audio. True Peak metering is part of the loudness standards, but it's also really relevant if there's a lot of audio compression that's going to happen further down the line.

"If you go to 0dBFS peak you'll almost certainly introduce distortion when you turn it into an MP3 or AAC. The algorithms can't handle it. In fact, they can't really handle anything above -3dB True Peak, so it's a much safer peak level to use.".

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LittleBigAudio

John Broomhall discusses audio development for one of PlayStation's best-loved video game franchises with Media Molecule's audio ace, Kenny Young

MEDIA MOLECULES'S Media Molecules's LittleBigPlanet took the video game world by storm with its innovative, left-field and delightfully quirky world in which players not only enjoy a tailor-made gaming experience but can also 'roll their own'. The popular title provides a set of tools which allow players to make their own game levels – spawning a huge community of enthusiasts, many trying (and succeeding) to make the original game release do things it was never intended to do, a lot of which Young calls 'mind-blowing'.

With the sequel, the target was to give the hardcore users even more tools to make cool new experiences and the other was to lower the entry barrier for everyone else – to empower them to do the crazy stuff that only the hardcore could fathom. Young: "My favourite has to be the music sequencer, which addressed the problem we had with LBP1 whereby its already extensive music library became rather stretched over 3.5 million user generated levels.

"In essence, the audio is simple. Its role is to reinforce the game world with a sound aesthetic which I would call cute, rather than cartoony or silly - but not overtly realistic. For example, the 'physics audio' is important for bringing different materials to life - LBP is a tactile experience, using cloth, cardboard and polystyrene - so it needs to sound plausible whilst also having a little character. The visual aesthetic is very scrappy and handmade so the soundtrack has a rough edge to match - with constant juxtaposition and mash-ups changing the music from moment-to-moment - a bit like randomly playing records from a charity shop bin."

Roll Your Own

But the real challenge for Young's audio development lies in the game's innate user-generated content (UGC) bias, bearing in mind that all content is effectively a library of elements to be deployed by the player in their own level implementations. With the first game, there was real concern with allowing people to add their own audio for obvious copyright reasons. In the second game, players are allowed to make their own voice recordings but, says Young, "We decided to only allow one of these 'magic mouth' voice recordings to play at any time. If we'd allowed multiple instances, it would have created another problem – whilst empowering certain people to do more sophisticated things, for many others it would create the annoyance of having to manage several voices playing concurrently despite that being the exception.

"When you're working on 'UGC audio', much of your known good practice to create a tailored, perfect sound is conflicted – the tricks you might rely on in traditional game development to make things sound great could mess up the tools and library you're putting together for the player. Every piece of sound and music has to be considered as a useful library element. Ticking those three boxes of library usefulness, game-play/feed-back suitability and fit-to-scene/context can be really tough. Ultra-specific sound effects are no use in this scenario – you have to think about everything through the lens of a player/creator using your sounds as a building block... When new contractors come onboard, they find the first few months a very steep learning curve and need to temporarily discard some of their usual methodologies.

"...Generally, the vibe at the company is incredibly open. Everyone's ideas are always welcome and we try not to segregate the different disciplines – we're more like musicians jamming. Our production department is brilliant at ensuring we're informed and that audio is represented at all points. In fact, audio is viewed as a central part of the player experience. To get great audio, you have to be empowered as a department and work closely with everyone else, being able to influence key decisions.

Kenny Young

Rack Boy

Young's DAW of choice is Nuendo, which he also uses for music writing. Hardware-wise his i/o is an RME Fireface 800 hooked up to Genelecs. For quick bespoke recordings, he keeps an Audio Technica 4033a mic permanently wired into a Universal Audio LA-610 MkII channel strip - but possibly his most important tool is Sound Forge.

> "When you're working on 'UGC audio', much of your known good practice to create a tailored, perfect sound is conflicted – the tricks you might rely on in traditional game development to make things sound great could mess up the tools and library you're putting together for the player."

Young: "By working in a single track editor like Sound Forge, I'm forced to make decisions and commit to them a lot more regularly. The editing is destructive, so I've developed this process where I save iterations of the sound I'm working on over time. By making that act of committing to saving, it encourages decision-making and I find that I don't spend as much time faffing about hoping serendipity and 'just one more plugin' will magically solve my problems.

"We use FMOD for our core audio engine so using its design tool entails one level of implementation but we also have to integrate the sound events into the LBP level editing tools and then use those to actually implement sound in a level. It's intrinsically inefficient but that's the wonderful world of UGC where you have that responsibility to take on a little bit of the faff for the end user.

"I take responsibility for the final mix, and because it's UGC my general mix manifesto is that players should be able to slap any sound down in a level and it should just sound good from the get-go. I don't leave the mix to the end - I really try to stay on top of it throughout development, mastering my assets before they even go into FMOD, always working at a calibrated monitoring level. I don't take the mix to another studio, though I do listen on a variety of setups, and I'm probably too much of a control freak to bring in another pair of ears! The bottom line is I'm really proud of the way both games sound and I think that's testament to a good set-up and process."

With LPB2 released almost a year ago, there are now an unbelievable 6.75 million levels online. Meanwhile, Young is working on new as yet unannounced projects... .

The Nightjar

JOHN BROOMHALL discusses interactive sound design for audio-only, imagined worlds on iPhone with recent Bafta Games nominee, Nick Ryan…

You’ve been abandoned on a spaceship. Bad news, it’s been invaded and the crew has made a hasty exit in the escape raft. You’re stuck in a lift, with no vision. Put your headphones on and listen to some instructions that might just save your life...

So begins *The Nightjar* – Somethin’ Else’s latest audio-only adventure for iPhone with award-winning Nick Ryan responsible for all audio content.

Ryan has always been compelled by the interaction between what we see and hear, contending there’s still much to learn: “There’s something very important about how our auditory and visual worlds collide. When we see things, we assume our sensation is visual. Actually a lot of what we feel when we see things has to do with the accompanying sound. Even as a kid with my first Walkman, I noticed things in the music that seemed to relate to the visual world. Sounds would bring out detail in visual texture with particular audio frequencies correlating with temporal frequencies – like white lines or wicker fences whizzing by. Harmony would leap out of the music as colour”.

No surprise then, that Ryan has undertaken extensive sound-tracking work for film and documentary as well a diverse portfolio of other fascinating projects. When he co-developed the BBC’s interactive binaural radio play, *The Dark House*, in 2003, the stage was set for further exploration of interactive, audio-only experiences. First came *Papa Sangre* and now *The Nightjar*.

Hear, Not See.

“My job has extended into making sound for imagined images, as well as real ones”, says Ryan. “For me, these titles speak to the future of radio. We call them games so people get it but they are pieces of interactive sound.”

The Nightjar entailed creation of a new gaming engine to render spatial sound in real-time, modified according to the player’s movement/virtual position. A simple touch interface was devised for interaction with the imagined world. One section enables you to rotate and the other to control left and right footsteps (using your thumbs). Hence you can move and turn.

Ryan: “All the AAC-compressed sound is held in memory. The engine doesn’t generate sound – everything is triggered. For example, the footsteps are specific to the surface you’re walking on and include baked-in reverb, used as a key signifier of the space characteristics. We can’t create obstruction/occlusion, so to give you the impression you’ve walked into say, a cupboard within a room, we have to change the footsteps’ acoustic. Sometimes, this may be all that enables you to comprehend the space – like an echo location device. There are looping atmospheres (two whose end points never coincide), plus the sound of monsters – spatialised 3D positional mono ‘objects’ that move around you in the world. And there are collectibles we call ‘notes’ (we imagine them as musical notes bouncing up and down on the floor) – also spatialised. To make it sound procedural, we need huge variation so there are thousands of audio files.”

> ”The process of capturing sound may arguably be reductive, but on playback, albeit in this case of fantastical sound, we’re giving the listener the actual experience of hearing that sound were they to have been in that space.”

The other key device is narrative – both a HAL-style computer voice and a colleague guiding you over headphones – voiced by Benedict Cumberbatch. Helping glue all this together is a real-time reverb which, according to Ryan, ‘covers a multitude of sins’.

From the outset, Ryan recognised the potential for binaural. “The binaural assets are really immersive,” he explains, “...Binaurally created atmospheres widened by using binaural width enhancement, enabling me to create a virtual source image of both left and right speakers and place them in a virtual acoustic place. Plus dummy-head recordings – playing out atmosphere elements through loudspeakers recorded with a Neumann KU100 (also used on location). It’s a combination of techniques plus some conventional width enhancement, using plug-ins like Waves Imager and Shuffler.”

Ear Of The Beholder

Interestingly, Ryan found it vital to design and calibrate the spaces by creating paper maps: “Without doing that, everything remained fluid and I’d put things in the space which sounded much bigger than I had imagined. Even with this calibration, people continued to experience differing sensations of the spaces. You have to be careful - what sounds to me like a river, might be perceived as a lavatory by you! I had to encourage the team to think about the design of the world from an auditory point of view. You can’t just say, ‘Let’s put a hill here’. What does that sound like? One helpful device is the narrator subtly suggesting the kind of space you’re in. For instance, there are semantic interpretations of the term ‘Palace’ or ‘Chamber’, crucial to helping us perceive the space. It’s difficult, but so exciting because it’s entirely subjective, which means players are able to populate that world with their own visualisations and more importantly, their fears. That, together with the ability to act in the world, is what makes it so immersive. For me, these titles represent a portal to a new realm, unlimited by physics or by bodies – particularly special because humans are capable of convincing themselves what they’re hearing is real. The process of capturing sound may arguably be reductive, but on playback, albeit in this case of fantastical sound, we’re giving the listener the actual experience of hearing that sound were they to have been in that space. It’s the very same stuff. Call it a virtual reality, or whatever you like, but that’s why for me audio-only represents a new and completely believable realm.”

www.somethinelse.com
www.nickryanmusic.com

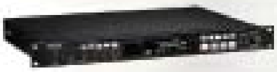
Nick Ryan

Recorders

Everything in this month's Product Sampler has one thing in common – they all record. Then they diversify: whether it's portability, format, metering, microphones, media, each product has its own USP – or USB; what you want out of your recorder is up to you. Have a look and see what each one can do for you...

Aaton's Cantar-X2 is an over-the-shoulder eight-track mixer and recorder. It is able to simultaneously record the same audio files on both the internal and external hard drives. Continuous software development has brought new functions to the X2 including PolyRotate, which is able to auto-shuffle multi-monofiles into the polyfiles that some Avid and FCP editors require; and Play&Record, a system which can record live audio while playing back pre-recorded music, and quickly overdub a dialogue track.

www.aaton.com

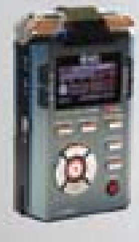


The Denon DN-F650R is a professional solid state recorder that records to and between SD/SDHC Flash card and USB external drives. It is designed for playback and recording applications in AV installation, audio production, live sound, theatre, and broadcast. The recorder features balanced XLR analogue audio and AES/EBU digital I/Os. Serial, parallel and contact closure remote control are supported and the unit can be operated with DENON's latest RC-F400S 'Hot Start' serial remote control.

www.dm-pro.eu

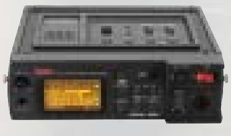
The Marantz Professional PMD661 is a robust, versatile, handheld PCM/MP3 recorder. It has a broadcast feature set, as well as some design innovations – which include making it significantly smaller than its somewhat brick-like predecessor, the PMD661. It features both balanced mic and balanced line XLR inputs, as well as unbalanced line outs on RCA connectors and a secondary unbalanced line in on 3.5mm mini jack connector. It is SDHC compatible.

www.dm-pro.eu



The L-300 from AEQ is built on the success of the AEQ DR100 and its immediate predecessor, the PAW120. The portable recorder offers a built-in microphone with an XLR adaptor for external microphones. It supports the BWF file format for easy integration with radio automation systems, and has SD/SDHC data storage. Users can record and edit linear PCM and MPEG compressed audio. A mechanical switch activates automatic gain control.

www.aeqbroadcast.com



The Fostex FR-2 has been designed specifically for location sound recording, high-quality sound effects acquisition and TV and radio documentary use. The unit records industry standard, PC-compatible BWF files on a FAT32 media format. Transferring files for editing or backup can be done via a CompactFlash reader attached to a computer; a PCMCIA slot and/or a CF adaptor; or the on-board USB port. Automated file naming is compatible with both US and Euro clapper board standards.

www.fostexinternational.com

Mayah's Flashman II is a portable recorder for reporters. It is able to record locally to SD card or USB sticks, whilst simultaneously transmitting audio back to the studio. By doing so, the user is able to edit their material after transmission for subsequent re-use. It supports most modern networks and interfaces. Proprietary FlashCast technology recognises and connects to almost any audio codec and format, simplifying operation while on location.

www.mayah.com

Aeta Audio offer the 4MinX, a digital multi-channel mixer and multi-track recorder in one unit, offering mixing and recording of 5.1 or 7.1, both inside and outside. It can be used as a TV/film sync-sound location recorder, the reconfigured for recording music or for mixing up to four channels. Up to six hours of location work can be undertaken before the standard batteries need recharging. An optional surround sound monitoring from SoundField is available.

www.aeta-audio.com

JoeCo's BlackBox Recorder, a large-scale multi-channel recorder specifically designed for audio acquisition and capturing live performance, is now available in six models. Available in both analogue and digital variants, the regular BBR1 BlackBox Recorder can record or replay up to 24 channels of 24bit/96kHz audio in BWAV format. The BBR64-MADI and BBR64-DANTE versions of the recorder can record/replay up to 64 channels at standard sample rates. Audio is recorded as mono broadcast WAV files to an external USB2 drive or USB2 Flash drive.

www.joeco.co.uk

The Nagra VI is an eight-channel digital recorder with 120GB internal hard disk. Four of the unit's six analogue inputs are equipped with traditional Nagra microphone pre-amps. The remaining two are AES inputs. The VI is fitted with a full SMPTE/EBU time code system including a chase synchroniser. The Nagra VI is delivered with a removable battery box containing a lithium-ion battery pack, a mains power supply, and is equipped with a 120GB internal hard disk.

www.nagraaudio.com

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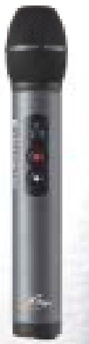
The Olympus LS-20M has not just studio-quality sound, but also full HD movie mode. The portable recorder offers a low-cut filter and high-resolution 96kHz/24 bit linear PCM recording format, with built-in microphones at a 90-degree angle which provide a natural and rich stereo sound. The device has a self timer, voice sync function and an optional remote control, for hands-free use. The Reverse Angle Recording function enables upside down recording.

www.olympus.co.uk

Sony Professional's PCM-D50 is a 96kHz/24-bit recorder. It features a two-position stereo microphone and digital pitch control. It can record to a 4GB internal Flash drive, or an external memory stick. The device can record for 14 hours at 44.1kHz/16-bit when powered by four AA batteries. It has a unique dual digital limiter function, a high pass filter with selectable frequencies and SBM (Super Bit Mapping) noise shaping.

www.pro.sony.com



Yellowtec's iXm is a reporter's microphone with proprietary auto-levelling. An adjustable pre-roll time makes it possible to record up to 30 seconds of pre-buffered audio prior to the record button being pressed. The recorder features a choice of three interchangeable mic heads. The DSP automatically adapts to each detected mic head without changing any manual settings. There are three intuitive indicators – record ready-recording, battery status and memory status.

www.yellowtec.ocm

The LS-100 from Olympus is a multi-track linear PCM recorder. It has some high-performance features, including an XLR connection for individually setting the recording level for the L?R channel and phantom power supply, and high-end directional microphones able to capture up to 140dB. Linear PCM recording is complemented by BWF and multi-tracking capabilities. Overdubbing, pre-, automatic and remote recording are also available. It has a 4GB memory, plus SD(XC) slot.

www.olympus.co.uk

The Sound Devices 722 is a two-track, file-based digital audio recorder, designed for applications where high-resolution audio capture is essential, in a portable, durable device.

It has onboard hard disc drive, and records uncompressed PCM or compressed MP3 audio to this hard drive, a Compact Flash card and an external FireWire drive simultaneously. It can be connected to Mac OS or Windows computer with FireWire 400 for high-speed data transfer.

www.sounddevices.com

Yamaha claims that its C24 pocket recorder is the world's smallest and lightest recorder – and at 0.57g with battery, it certainly is incredibly light. Despite its tiny size, it manages to fit in 2GB internal memory, expandable with microSD cards. The unit has 24bit/96kHz recording capability and an onboard speaker, and a five-band equaliser to allow users to tailor the playback sound. A high-pass filter automatically reduces wind noise and low frequency rumble.

www.yamaha.com

Roland's six-channel portable recorder, the R-26, has two types of stereo microphones built in; plus a pair of XLR/TRS combo inputs for external microphones and an input for a stereo plug-in powered microphone. Simultaneous combinations of the built-in directional and omni-directional microphones, as well as the external inputs, can be chosen. Six channels (or three stereo channels) of simultaneous recording are supported. A built-in high speed USB interface allows for use as an audio interface or external storage.

www.roland.co.uk

The 788T and 788T-SSD are members of the Sound Devices 7 Series of digital audio recorders. It is designed for production sound and features eight inputs and twelve tracks. Each input accepts either microphone or line-level signals, and is capable of providing 48V phantom power for condenser microphones. Extensive routing flexibility allows recording of isolated inputs while simultaneously recording mixed tracks. Input or track assignments can be sent to analogue and digital outputs.

www.sounddevices.com

The Nomad from Zaxcom is a complete location sound recording solution for film and television producers. Specifically designed for over-the-shoulder use, it seamless integrates with Zaxcom Digital Wireless, IFB and ERX systems. Available in four different models, the Nomad 4, Nomad 6, Nomad 8 and Nomad 12, the unit's features include six XLR mic/line level balanced inputs; four, six, eight or twelve track recording (model dependant) on dual CompactFlash cards; MARF and FAT32 file systems and IXML metadata recording.

www.zaxcom.com

The SADiE PCM-H128 system is a multi-track digital recorder that benefits from SADiE 6 software. It can slot into a range of traditional analogue or digital studios, with modular I/O available in multiples of 16 up to 128 in/out. It comes in two form factors: the 4u MADI version and the 10u Expander version. The former provides digital I/O only on MADI interfaces; the latter provides an expansion chassis that offers flexible combinations of analogue and digital I/O options.

www.sadie.com

The Tascam HD-P2 portable high definition stereo audio recorder is aimed at those working on live and on-location applications. Co-developed with Frontier Design Group, it records at up to 192kHz/24-bit to Compact Flash media, and its audio files are instantly available to DAWs through the built-in high-speed FireWire connection. It features a SMPTE timecode input. The unit has a pair of XLR mic inputs with phantom power and analogue peak limiting.

www.tascam.com

Zoom's H4n portable recorder has a unique X/Y microphone arrangement that ensures the microphones are always an equal distance from the sound source. The stereo condenser microphones allow variable recording patterns at either 90 or 120 degrees. The unit offers 24 bit/96kHz linear PCM WAV files, or a variety of MP3 formats to produce smaller files. The H4n users compact SD or SDHC memory cards of up to 32GB. It also has a new, digitally controlled pre-amp.

www.zoom.co.jp

At Green's Convenience

Duro at work.

PAUL WATSON talks to Cores and Duro – the Producer/Mixer combo responsible for a large chunk of the latest Professor Green Album, *At Your Inconvenience.*

Photos: Johnny Beckett.

PROFESSOR GREEN shot to stardom after his debut album, *Alive Til I'm Dead*, made it to number two in the UK album chart in 2010, and his success has grown ever since. He's performed at a string of major venues including the O2 Arena and Wembley Stadium, supporting Muse and performing alongside Lily Allen; and *Read All About It,* the first single from *At Your Convenience*, went straight in at number one in October 2011.

Although four or five different producers were involved in the recording of Professor Green's latest album, *At Your Inconvenience*, long-time friend and producer, Cores, engineered and produced a large chunk of the record in the hackney-born rapper's London-based studio facility, 'The Spaceship'.

Cores has worked in a number of different genres, from pop and rock to hip-hop, the latter of which, he says, is where he is most comfortable. He also produced Green's first record, so was pretty well versed in terms of what to expect from the new record and managing the workflow in the studio.

Cores produced *Today I Cried, Never Be A Right Time* (Green's second single), *Into The Ground* (the final track on the album); and Green's cover version of *Where's My Mind* (Spinning Out) by The Pixies. He also co-produced *Astronaut*, and was given the official title of Executive Producer in a bid to keep the entire project cohesive.

Voice Box

Vocally, everything was engineered by Cores at Green's London facility. Green's vocal chain is a Neumann U87 into a Neve 1073; then into a Universal Audio 1176LN; and finally through a Lavry Blue A-D convertor.

"We recorded all the vocals here and treated everything as far as it could be treated before it went over to [mix engineer] Duro in New York," he explains. "Any tuning, any vocal alignment, tricks like that, I do it all here."

Although Cores has tried several other mics other than the U87 with Green, including the AKG C12 and Sony C800G, he says they've never been quite right.

"The U87 works great on Green's vocals; okay, the mic doesn't tend to get the press anymore as it's not exciting enough, but it still sounds great. I'm not excessive with anything on the way in at all; I don't use outboard EQ, it's just a little bit off on the 1176 and that's it, you know? Then the rest is all done in the box - and it was great that Duro worked in the box too; I think the same way he thinks, which is perfect.

Cores' main monitors are Focal Twin B6s, which he says have the best balance of accuracy and vibe, and great low end for this genre of music. He also has a set of Yamaha NS10s, a pair of M-Audio Studiophile hi-fi speakers which he uses for reference, and 2 pairs of DT100 headphones (one in the control room, and one in the booth). He also has a pair of Sennheiser HD650 headphones for on the road work. A Yamaha O1V96 console serves as a controller/

►

Cores in the studio.

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www.olympus.co.uk/consumer/LS-Series

monitor board, and all his production work is done in Logic.

Beats Working

Cores creates many of Green's beats from the London facility. Part of his workflow centres around Native Instruments Battery, which he says matches up perfectly with his Akai MPD controller, which is set on wheels, and sits alongside him in the middle of the stereo image.

Every drum kit Cores creates is bespoke, and he always prints the drum parts with FX engaged.

"That's a production thing for me; it's the whole vibe I am going for. It's led to a few complaints from some engineers, but Duro got it straight away. It's rare to find three kicks and 10 snares in some genres, so when I sent off *Never Be a Right Time* and the drums came back pretty much as they should have, I thought 'yes!'; they sound simple on first listen, but when you look, there's so much going on; one small fader movement can change the whole rhythm.

NIGHTMARES

With the *Nightmares* track, there were many different elements to deal with, including a vocal effect track with someone breathing and coughing the whole way through. Duro added some unusual delays to create a spooky kind of effect, and as a result, the vocal-heavy introduction sounds unique.

"It's strange, but it really adds an interesting sort of dynamic to the vocal which you can't necessarily pick out, but it's there; I sent that to a bus as well, and one of the vocal tracks was printed with a flange, so I have it filtered and put on a slap-back delay that's going back and forth; and that enhances that effect even more. I used the Digidesign Long Delay 2 to make that happen.

For the guest vocalist on Nightmares, Royce, Duro used the de-esser from the SSL E-Channel Strip plug-in, a little EQ, and some compression; and generated the same vibe on the Green vocal using the same vocal strip. When it came to mixing the track, he says he attacked it with a straightforward hip-hop approach, and as a result, it took him just a couple of hours.

"Another comment I got from other engineers was that they didn't like the long verbs I put on snares, and there was a stage when we were mixing the first record when I thought: 'you know what, they know better than me, so I'm just going to shut up and listen and just watch what they do'. So I took it all in, but wasn't happy with the mixes on a few of the tracks; now I know more than ever what I want something to sound like, so I have a balanced enough view to know when they are right and when they should listen to what I have done and try to understand it.

"Again, with Duro that wasn't an issue at all; I'd print all the verbs and it was all good; if anything I'd just disengage the odd one and re-do it there [at Jungle City] a little bit more accurately."

Mix Master

Duro is currently one of the most in-demand mix engineers in the world and is based out of New York's Jungle City studios, owned by Alicia Keys' producer, Ann Mincieli. It was May 2011 when the mixing of Green's album commenced, of which Duro mixed all 15 tracks, working closely at times with Cores.

Duro took on the role after finding what he described as an eclectic blend of super-street, pop, disco, and "a track reminiscent of a Puffy record" when Googling and YouTube-ing material from Green's back catalogue.

"I was interested to hear what the new stuff would sound like, and when I got round to mixing the first single, *Read All About It*, I have to say I was pleasantly surprised," reveals Duro, whose diverse list of album credits includes Mariah Carey, J-Lo, Taio Cruz, and Britney Spears. "Mixing those 15 songs took from start to finish around 40 studio days because there were a lot of little changes to make along the way, and there was also the UK time difference to deal with; the project included a lot of vocals too, and that is always more time consuming."

At the beginning of the project, Cores had sent Duro four tracks to work on. The two were in constant communication; and after those songs were completed, Cores and Green were so encouraged by the results Duro was getting that they asked him to mix the remaining 11 tracks.

READ ALL ABOUT IT

The song *Read All About It* was made up of 70 tracks: 25 main tracks, a further 26 for the orchestra, and 19 tracks of vocals: main lead vocals; stacked backing vocals; extra vocals in the hook; several channels of Green's vocal adlibs; and a stacked vocal bridge section.

When mixing the track, Duro started with the key element: the beats. When mixing beats, he pans just like he would a real drum kit, so there are certain placements he naturally goes to.

"Sometimes I push a bunch of faders up and make them loud or low or whatever, but this song had a Pro Tools session mix already existing. Usually with a rough mix, I just isolate sections and figure out what pieces I want to deal with first. With this, I just basically listened to the drums then took the overdub parts and put them around to support the loop where the kit sits.

"Next, I started bringing in the pianos and the bass; there's one stereo track of pianos and some pads, but outside of the rhythm section, the piano is the main element that everything else in the track is built around."

Practically no compression or EQ was added to the individual elements within the track, just a little compression on the piano from his SSL E-Channel Strip plug-in, and a modified version of a Lexicon 'large hall' reverb on the strings section.

On the main vocal hook, which is sung by Emeli Sandé, Duro applied fast-attack compression using the SSL E-Channel, and also ran it through his Bombfactory Urei 1176 in a bid to add vibe as well as depth. The vocal was then de-essed.

At the start of the third verse, as the track is building, Duro adopted a technique he often uses when mixing this genre of music: bringing the drums up by 2dB.

"It's all part of the building the song, and as well as the drums, I also brought the strings up in volume; it just gives a song much more oomph and adds a bit of drama to it also. I raised the strings by 1.5 dB; and to the average listener, that just feels much more powerful."

"At that point I did ten days on my own," continues Duro. "...And then Cores came over to New York to work with me in the studio making final tweaks. We'd dial in stuff here and there, and send Green the mixes. Cores knows Green very well, and based on my mix, he'd say 'I know Green will want this or that', so we'd then incorporate what he was trying to hear into my version, and then Green would approve the mix. That was the process."

Duro mixed *At Your Inconvenience* completely in the box on Pro Tools 9 HD. Although he has gradually got used to using less and less hardware, he does still print his final mixes onto one-inch

TODAY I CRIED

One track from the album that both Duro and Cores highlight as stand-out is *Today I Cried*, a downbeat, dark composition, which has a running hook throughout, and, like a number of the songs on the album, features a full orchestra.

"That track is definitely one of the strongest," Duro insists. "The acoustic guitars are only slightly compressed but heavily EQ'd on the top end, which I did using the SSL E-Channel to add a little more sizzle – a bit of life; although it also gives it a more sombre tone too. The story grows as the record grows, and the strings add another dynamic."

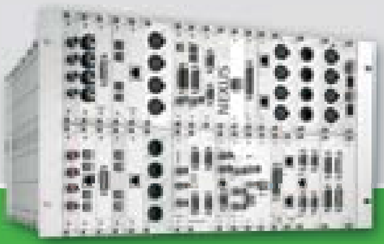
Duro started his mix process on *Today I Cried* by working on the 20 tracks of drums, which included six snares, three kick drums, claps, rim-shots, a lot of hi-hat layering, plus an additional snare, woodblock and tambourine for the main hook.

"I tend to let all that stuff just go where it's going; I just blend what I've got together and create a rhythm section that I like," Duro explains. "Then I brought in the piano and the bass; it's a sampled piano, so it's not compressed; I just added a little top end to brighten it up."

Although that mix took just a few hours, he estimates that he spent roughly one week making tweaks and altering levels. "Once I had the basic vibe, I added nuances to try and take the listener on an instrumental ride, with a few tweaks here and there...."

two-track tape. He monitors using his trusted Genelec 1031A nearfields, and his set of Sennheiser HD800 headphones are never too far from his side: "Sometimes if I am in a room I don't know, I use them to ensure I get a definitive constant; I get great balancing using those cans."

Cores is clear about Duro's expanded role on the album: "The great thing about Duro is we are on the same page; he has a hip-hop background, and he really understands how it should be mixed. Over here [in the UK], the issue we have had is that we either get the rock guys, who tend to focus on the wrong parts of the mix; or we get the dance guys, who overdo it all a little bit. But from the beginning, Duro always understood exactly where everything should sit, so it was the perfect way of working."



WINTER GAMES
Vancouver 2010

OLYMPIC STADIUM
Athen 2004

SPENGLER CUP
Davos 2010

WINTER GAMES
Salt Lake City 2002

LONDON 2012

SKI WORLDCUP
Val d'Isere 2008

AMERICA'S CUP
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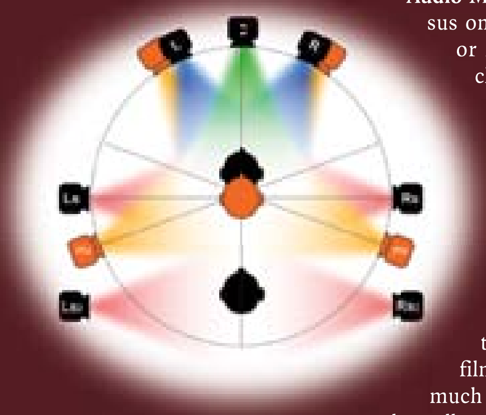
Surround Options

Are you Blur or Oasis? Are you ambient, or direct? Of course, the first question might be better posed as 'music or film?', but the simple matter of speaker positions does still seem to create some ill-reasoned loyalties and extraordinary myths. We turn to Andy Munro, to clear the whole mess up...

SETTING UP Setting up a surround monitoring system is fraught with issues – acoustic room treatment, bass management, and speaker positions are just a few. It's that last one that causes a special bit of confusion – particularly if your work isn't wholly music or wholly film sound. Of the myriad of surround speaker positioning protocols, it does seem that two are particularly prevalent: ITU–R BS.775–1, and what is normally referred to as the Dolby set-up (early detail in the Dolby Surround Mixing Manual). What is essentially the ITU set-up is, in fact, detailed in Dolby's 5.1-Channel Music Production Guidelines. The main differences are the positions and angles of the surrounds. ITU has the surrounds on the imaginary circle around the listening position, angled directly at the sweet spot (all source equidistant from listener), while the Dolby surround mixing version has the surrounds on the side walls, pointing inwards and positioned above the listener (thus the surrounds are more 'ambient' than 'direct'). Of course, there are more variations, especially when it comes to larger rooms and Dolby certification, and so on.

So this doesn't get out of hand, it's best to ask an expert. Andy Munro, of Munro Acoustics, has designed some of the most highly-rated surround rooms for both film and for music around the world. We spoke to him about not only the placement of speakers in a multi-channel environment, but also the philosophy of surround mixing in general. It seems that you can't think about monitoring without considering mixing... Which is probably as it should be.



Audio Media: Is the world reaching a consensus on surround system monitor positions or is it fragmented. Which should we choose and why?

Andy Munro: "It depends on the room as much as anything. The room has quite a bearing on it. If it's a music control room and it's a music mix, then I would definitely go for the ITU arrangement – the classic 5.1 with the surround speakers at 100 - 120 degrees from the normal zero angle. But if it's anything to do with post production or film and so on then I would as much as possible try and go for the Dolby arrangement.

"The idea of the Dolby one basically is that the surround channels cover a much bigger area. The thing about the ITU arrangement is that there is a sweet spot – a mix position. Nobody else is going to get anything like a surround mix; so if you've got people sitting at the back of the room on a sofa or something like that then they're going to hear the surround speakers first, and then everything is going to be out, timing wise..

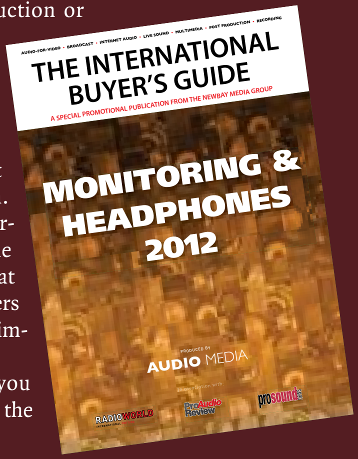
"With the Dolby set-up, no matter where you sit you hear the front speakers before you hear the rear ones, which as you can imagine isn't that easy in a small room.

"It's all to do with time delays really, and I think surround sound is very much misunderstood by a lot of music mixers because of that, whereas film people tend to understand it very well and are very subtle about their surround mixing. They tend to use a lot of reverbs and a lot of diffusion to 'de-localise' the sound.

"The best surround mixes, that I've heard in music anyway – which tend to come out of Nashville – use a lot of reverb and a lot of de-focussing on the rears. If there's one thing I cannot stand it's someone blowing a trumpet behind my left ear. I find it very disconcerting indeed... to the point where I really don't like listening to 5.1 in that way. I like listening to classical music in 5.1 if they somehow manage to capture the ambience of the hall and create the right reverb balance. It can sound fantastic.

"I remember hearing a radio france transmission years ago that was, if I remember rightly, on a DTS or Dolby demo disk in the early days of DVD. it was so good it sent shivers down my spine. It was recorded in a cathedral in France and I thought 'that's it... if that's the way surround can be done then it's just going to be a huge success.' Unfortunately, apart from a few opera DVDs and so on, not many people are doing it.

"The speaker arrangements and all of that are really secondary to getting the concept right. Actually thinking 'why do we have surround - why do we have multichannel'? The whole point is to put you into a space. It's not to do circus tricks like in the old ping pong days of stereo. The whole idea is to put you into a space and make you feel that you're there. That's it, that's the be-all and end-all of it. Okay, in the cinema you might have special effects like someone creeping up behind you or whatever, but that's very rarely used; and the reason it's rarely used is because it's very hard to get everybody to experience the same thing."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CONTINUED...

There's more to this article than meets the eye. You can read more of Andy Munro's expert view of surround monitoring options, plus get behind-the-scenes insight into a large range of the latest and greatest in monitoring and headphone options in our Monitors buyer's guide.

Download the new PDF from www.audiomedia.com/am_Monitors-Headphones12.pdf

Mastered for iTunes

LANA DEL REY
Mastered for
iTunes

The latest iTunes Store department – Mastered For iTunes (MFi) – promises higher fidelity sound files with specially-tuned recordings. **ROB TAVAGLIONE** helps navigate these waters, together with the handy document, "Mastered For iTunes: Music as the Artist and Sound Engineer Intended."

APPLE HAS a new codec for encoding its AAC (Advanced Audio Coding) files, one it maintains is preferable over many other encoders. The Mastered For iTunes (MFi) document explains that this performance is largely attributable to a two-step process beginning with the resampling of the source file to 44.1 kHz (not only are 24-bit masters now preferred over 16-bit for encoding, sample rates over 44.1kHz – from 48kHz all the way up to 192kHz – are encouraged for their increased detail). The output of the SRC is a 32-bit floating point CAF (Core Audio File), thus the original source file does not have to be dithered down to a 16-bit file (like a CD) with its inherent drawbacks before data reduction, plus the encoders work more efficiently because they aren't encoding unnecessary noise (from dithering) and are working with the availability of the full, original, dynamic range. The second step then encodes the 32-bit file into a 256 kbps VBR (Variable Bit Rate) AAC file.

MFi recommends downloading the Master For iTunes Droplet, a very simple drag-and-drop encoding program in the iTunes Plus format, which allows experimentation in the fine-tuning of masters and enables monitoring with the final consumer playback devices that utilise iOS. Two command line utilities are also recommended: "afconvert," also for encoding into the iTunes Plus format, and "afclip," to check audio flies for clipping. "AURoundTripAAC Audio Unit" is also recommended for comparing final encoded iTunes Plus test masters to their source files via blind testing and clipping identification (both sample and inter-sample on both the original file and the encoded one). Your stomach will likely turn, and your methodologies change, when you see how many inter-sample clips your consistently-peaking-at-0dBfs master has after encoding.

MFi goes on to recommend leaving 1dB of headroom in your master to avoid both types of clipping. Leaving even one unused decibel seems to be a rare practice these days, so the document goes on to explain that Sound Check (found within all iOS devices) and other similar playback volume control technologies use Replay Gain (a playback level parameter found within a data compressed file's metadata) to raise or attenuate volume so all songs play back at approximately the same level on the device. Widespread acceptance of this feature may negate the need for the volume wars, especially with the standardisation of streaming and broadcasting volume becoming the new norm. It should be noted that masters with clipping will NOT be rejected by iTunes.

MFi Misconceptions

Let me try to clear the air on some of the controversies and misconceptions surrounding MFi:

1. The MFi droplet allows you to encode your own iTunes Plus masters.

You may personally distribute these files and they will play back on any device with iTunes, but you cannot encode your own masters for the iTunes store: Apple still does that for you (although you will now submit a 24-bit, high sample rate file, not 16-bit/44.1 kHz).

2. It cannot be said for certain that an MFi master will sound better or worse than a CD, but it will definitely sound slightly different.

Based on my own comparisons between using the Master For iTunes droplet and encoding a CD track using the popular LAME MP3 encoder, the iTunes file sounded better than the LAME version and at time surpassed the CD in sound quality.

3. How does the master file differ from the original?

It seems to be slightly different with every file, thus results cannot be predicted. A null test illustrates the differences, but the audibility and significance of those differences is the cause of much lively debate.

4. MFi is not suggesting a different mastering process, or different artistic values, or a compensatory process that will improve iTunes sound quality.

There are numerous arguments for and against special pre-mastering for iTunes, but I will not enter that fray and the MFi document does not directly address it.

5. In order for newly improved masters to be sold in the MFi section of the iTunes store, they must "begin with a high-resolution digitisation of the original analogue source and must sound noticeably superior to the previously released version."

Is this worthy and significant, or is it just sales hype? As in 4., I won't jump into this argument. I recommend that you do your own listening and decide for yourself.

Exceeded Expectations

All things considered, getting better tools to improve our audio is a good thing. Furthermore, using the new AAC encoder and following the MFi guidelines yielded results that exceeded my conservative expectations. Although I could typically identify the source over the AAC – with the blind testing of the AU Roundtrip confirming it – the identifiable differences were typically minimal, sometimes insignificant, often visceral in nature and only rarely troubling.

I am still concerned that 256k AACs, albeit rather good ones, are being marketed as the new high fidelity standard, when even a 320k AAC would be a better choice. However, I'm a persnickety audio engineer that would buy a 24/96k WAV over any lossy product if I could, inconvenience and all. In all fairness to Apple, they mention that it is useful that they will now have your high-res masters on hand so they can take advantage of future technological improvements. It is rumoured that talks about Apple distributing 24/96 WAVs have stalled, at least for now. So maybe not today, but our day will come – count on it.

Please visit the link below to download the document and the associated software and begin preparing your masters for successful MFi encoding. Mind you, Apple will continue to do the heavy lifting for you, but at least now you know how to submit proper audio that will yield better results by having the diagnostic tools to settle some of these controversies ... at least in your own mind.

www.apple.com/itunes/mastered-for-itunes

QSC Audio KLA Series

WILL JAMES checks out the curves on this new compact line array from QSC.

The QSC KLA Series is a 'Fixed Arcuate Active Line Array System' aimed at portable and smaller permanent installations where a line array is still required.

The full-range KLA12 is the high-strength, riggable ABS cabinet, residence for two transducers: a 12-inch cone speaker and a 1.75-inch diaphragm compression driver. Its SOLO Rigging System simplifies deployment, as it requires no tools or external hardware to 'fly.'

The KLA12 compression driver is mounted to a 90x18-degree wave guide horn. The cabinet also contains two power amplifiers, each providing 500W RMS continuously for a combined output of 1,000W RMS. Input is balanced XLR female; an additional male XLR is available for signal pass-through. The amplifier accepts line level signal and contains Digital Signal Processor (DSP). Its DSP provides crossover and frequency control (via dial-adjustable Ar-Q Frequency Optimisation), limiting/protection, time alignment of the internal transducers, temperature/fan management, and factory voicing/EQ. QSC's DEEP DSP algorithm provides extended bass response "by actively managing potentially damaging low-frequency transients." KLA12 features Neutrik powerCON input and loop thru connectors; weight is 25kg, and dimensions are 382 x 594 x 422mm.

The KLA181 subwoofer, while cosmetically similar, is constructed of painted birch plywood, and hosts an 18-inch vented subwoofer transducer capable of 135dB SPL peak output and frequency response down to 33Hz (-10 dB). Power is provided by its integrated power amplifier (1,000W RMS), and QSC's DEEP DSP is also on board. The sub's incorporated threaded pole mount allows support of two KLA12 full-range enclosures, and suspension is possible via M10 fittings or KLA12AF Array Frame (the latter was utilised in these evaluations). KLA181 also features Neutrik powerCON connectors; weight is 100 lbs.; and dimensions are 547 x 586 x 653mm.

The KLA Series incorporates a very interesting control into its DSP called Arcuate Equalisation. Put simply, this circuit allows you to decide how many top boxes to be in the array, then you can select that number on a rotary control on the power amp. The DSP will automatically (electronically) adjust the waveform pattern, such that an obvious arc in the array will properly couple the EQ and function of the boxes, ensuring it acts like a traditional Line Array with a cohesive waveform. The boxes only interlock with each other at a fixed angle, and this selector will ensure the proper fit of each component to the waveform, maintaining proper EQ and uniformity of dispersal of sound.

In Use

QSC supplied us with four KLA 181 subwoofers, four KLA12 full-range speakers, and two KLA12AF Array Frame kits with associated hardware. It was a perfect set-up for flying two subs and two tops per side via Genie Towers with my live sound firm, Atlantis Audio.

Fortunately, this QSC rig showed up the very day that we were headed off to do a car show that has 1,000 classic entries spread over four baseball fields, plus a main stage for concerts. We decided to employ the KLA Series as music fills for the viewing fields, with iPod stereo signal fed via matrix master from our Midas Legend (an analogue live mix console. What can I say? I'm 58).

Two separate KLA arrays covered all four fields with great evenness. The combination of two subs on top and two full-range cabs under the subs was a perfect compliment for the job at hand. We supplied one 20 amp/125-volt circuit to each array, as the cabinets linked conveniently with Neutrik powerCON connectors, colour-coded for proper feed direction. All told, we had both arrays out of their shipping boxes and up, in action, in less than 20 minutes.

We ran the arrays completely flat, and they sounded excellent. We never needed to adjust the polarity via the provided polarity control switch, as everything lined up perfectly.

On another occasion, we flew the arrays from our 40x40 Total Structures concert roof, employing the KLA Series as audience fills for seating areas to the side of the roof. On this particular instance, we fed full concert signal to the speakers (for Paul Revere and the Raiders with The Grass Roots), inserting a Klark-Teknik Square ONE graphic EQ on the two signal paths. The boxes required very little EQ, yet with a pinch of correction, they sounded superb. Their proprietary fly frames made the set up go very quickly, and everything pinned together very nicely. This entire array weighed only 140kg per side and required only one 20 amp circuit per array. These speakers are very easy to handle.

Summary

At first glance, the QSC KLA Series seems to violate the standard, "in-the-box" approach to line source speakers due to a severe bend in the array. But I must say that I am a fan of these speakers, as the EQ allows very smooth transitions from box to box, combining very nicely, with no appreciable phase disturbance or shading. This rig's dispersion is very even and the frequency pattern control is very controllable, especially considering the short line that it is.

Obviously, you will not be filling arenas with controlled patterns from this line, but that is not QSC's intention. QSC created KLA to fill a void between the realm of large line arrays that can be controllable at much lower frequencies and capable of great throw, and no line array (or using conventional speaker boxes, which still have their applications). QSC has consistently-crafted quality products through the years, and this product is one of them.

INFORMATION

£ QSC Audio KLA System KLA12: £2199.00 + VAT;
KLA181: £1899.00 + VAT

Ⓐ QSC Audio, 1675 MacArthur Blvd Costa Mesa, CA 92626
Ⓦ www.qscaudio.com
Ⓐ UK Distributor: Shure Distribution
Ⓦ www.shuredistribution.co.uk

THE REVIEWER

WILL JAMES, owner and chief owner of Atlantis Audio and Lighting, is a longstanding Contributor to *Pro Audio Review* – an *Audio Media* sister publication.
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Digital Television & HD

KEVIN HILTON continues his exploration of the evolution to digital television and HD.

Digital television (DTV) has been through a faster rate of change in its short 19-year life than analogue TV did over 80 or so years. The DVB (Digital Video Broadcasting) standards for cable, satellite and terrestrial transmission were drawn up in the mid-1990s but have since been updated as second generation versions after a relatively short space of time. This was done to reflect the changing requirements of broadcaster that were adapting to rapid technological advances, which have brought high definition television (HDTV) and greater interactivity to the small screen.

These are now in operation, enabling this next phase of TV development, not just HD but also 3D stereoscopic and data broadcasting. The first to be updated was DVB-S in 2003, ratified two years later. Among the changes from the original format are: a new coding scheme based on the LDPC (low density parity check) linear error correcting code; VCM (variable coding and modulation) and ACM (adaptive coding and modulation) settings; improved bandwidth; and increased modulation up to 32 APSK (amplitude and phase-shift keying/asymmetric phase-shift keying).

DVB-S2 was introduced to accommodate standard definition and HD transmissions, plus interactive services that could include internet connectivity. In the last couple of years satellite equipment manufacturers and service operators have called for a further upgrade to the standard in the form of DVB-S3 to provide adequate capacity, not just for HD and other broadcast formats but to cater for the transition from transmitting video as video to transferring it as data over IP networks.

Among the proponents of a third generation standard is Israeli manufacturer NovelSat, which has developed the NS3 range of modulators to produce data rates of 765Mbps on a 72MHz transponder. The DVB Project is now discussing a new specification for satellite contribution and high-speed data links but says anything coming from this will not be a replacement for DVB-S2.

An extension of the terrestrial digital broadcasting standard was first proposed in June 2006; DVB-T2 was eventually ratified in June 2008. The aim was to provide optimum reception for static and portable (i.e. not fully mobile) TV receivers using existing aerials. More efficient use of available spectrum was another consideration, as well as giving enough bandwidth for new national multi-channel HDTV services, with the possibility for datacasting.

The second-generation standard includes differences in forward error correction, modulation, the guard interval and the size of the Discrete Fourier transform. DVB-T2 is now deployed in a number of countries to support new HD terrestrial services, including the UK (for Freeview HD), Italy, Sweden, Serbia, Ukraine and Denmark.

Development of DVB-C2 began in 2008, investigating multiple transport streams, variable coding and modulation, adaptive coding and modulation and expanded modulation. The finished standard was approved in April 2009.

The DVB standards are foundations on which broadcasters and platform providers, such as satellite and cable head-end operators, can build services offering multiple channels with different degrees of interactivity and general picture quality. Many countries in Europe are now switching over from analogue to digital transmission; in many cases this coincides with the introduction of HD broadcasting.

High definition as we understand it today, with digital processing and accompanying surround sound, has been in the offing for approximately 20 years. Analogue HD that surpassed PAL, NTSC and SECAM in terms of the number of lines in a frame was first proposed around 45 years ago but the term high definition was used as early as the 1930s. A report published in 1934 described John Logie Baird's 243 line mechanical TV system as HD but it wasn't until two years later that the world's first HDTV service went on air. This was the BBC's first TV channel, broadcast from studios at Alexandra Palace in north London using the 405 line electronic system developed by RCA and EMI. A ceremony was held at Ally Pally in 1990 to mark this important event and was attended by several former engineers who had worked on the transmissions back then. One remarked that if what he had helped deliver back then was HD, then people should find a new way to describe the emerging technologies that had been developed in the 1980s.

The next big development in analogue TV was colour, which was made possible by the appearance of the 525 line NTSC format in the US and Japan and the 625 line PAL and SECAM standards in most of Europe and Australasia; and France, the former Soviet countries and parts of Africa respectively. Research into a higher definition transmission system was begun by Sony and Japanese broadcaster NHK in the late 1960s. The result was the Hi Vision (a contraction of High Definition Television) system, which operated at 1125 lines and 60 scanned field a second. By the early 1980s this was being offered to filmmakers as an alternative to 35mm film. The pitch was that HD had the same detail and high resolution as film but with the advantage that it was recorded electronically on videotape and could be edited and played back quickly and efficiently.

Higher picture definition appealed to filmmakers but soon broadcasters were also showing interest, attracted by double the number of vertical and horizontal lines that make up a picture. Through an almost 100 per cent increase in horizontal and vertical pixels, the percentage of the visual field held by the image would also rise, giving a two to three factor enhancement in the angle of the vertical and horizontal fields.

Another change was in the aspect ratio, which would go from the traditional rectangular 4:3 picture to the cinema-like 16:9 that is now the norm. Japanese viewers were appreciating such benefits during the 1980s while Europe and America resisted adopting Hi Vision and dithered over developing competing systems. In 1986 30 European manufactures, including Philips and Thomson, began working with the EBU on the Eureka 95 project. A year later the Federal Communications Commission (FCC) in the US ruled that any HDTV standard should be compatible with NTSC. By 1988 it had received 23 different propositions.

All the HDTV systems vying with each other during

►

GLOSSARY

MUSE

The MUltiple Sub-Nyquist sampling Encoding system was the basis of the first viable HDTV system Hi Vision and was developed by the Science and Technology Research Laboratories of Japanese public broadcaster NHK. MUSE was a dot-interlaced digital video compression scheme based on analogue modulation that allowed the transmission of 1125 line HD video. Of the 1125 lines used for the interlaced system 1035 were visible. MUSE/Hi Vision is not pulse and sync compatible with the digital 1080 line technology that forms the basis of HDTV systems being used now.

Television Technology: DTV & HD

news

New Zealand broadcasters Sky and TVNZ are collaborating on a new television network to bring DVB-T2 transmissions to the country. The IGLOO project will be the first Pay TV service based on the second-generation digital terrestrial standard in the Asia Pacific territories.

As part of the installation IGLOO is using the CP560 DVB-T2 Gateway from manufacturer T-VIPS to delivery HD channels. "Transmitting high quality video over DVB-T2 networks has undoubtedly been a success in the Northern Hemisphere and we're looking forward to emulating that in New Zealand," says Chaz Savage, General Manager of IGLOO New Zealand. "By adopting DVB-T2 we believe we can open up our services to a wider audience beyond DTH [direct to home] and cable services. T-VIPS has provided us with a top of the range solution that we can implement easily and effectively to give our customers the unfailing quality of service they demand."

"It's great to be involved in the first major DVB-T2 deployment in the APAC region – it demonstrates the growing popularity of the standard across the globe," said Espen Myhre, vice president of sales for T-VIPS. "We have been designing solutions for DVB-T2 networks since the standard was first adopted. We have delivered support for SFN operation, single or multiple PLP operation and both ASI and IP transport in multiple networks across Europe and Africa as well as for trials in the APAC region. We understand that different network operators have different requirements and this is why we make it our mission to design solutions such as the CP560, which provide flexibility and choice."

REFERENCES

Digital Video Broadcasting Project

http://dvb.org

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the 1980s were based on analogue technology, with, later, some digital compression to get the high bandwidth required onto the available carriers, most commonly satellite. It was the growth of satellite broadcasting that added to the already confused development of HDTV. European broadcasters were looking to adopt MAC (multiplex analogue components) for satellite services; this analogue system was, like PAL and SECAM, based on 625/50 but could carry a high number of channels on the same frequency, as with digital TV today.

Variants of MAC appeared over Europe by the late 1980s but implementation of the technologies was taking too long for some broadcasters. Famously, Sky chose to stick with PAL, giving it a march over its rival, BSB, which it soon after absorbed. Eureka 95 was based on a HD version of MAC but by the coming of the 1990s, new developments in technology were making manufacturers and broadcasters reconsider the whole basis of HDTV.

The first American proposal for an all-digital HDTV system came in 1990 from General Instrument Corp, followed soon afterwards by three others. The Japanese had reworked the MUSE technology (see glossary) on which Hi Vision was based to present a new digital version, which continues to be broadcast from satellite to cope with the wide bandwidth. This modified system was also proposed to the FCC in the early 1990s, along with an enhanced TV format. In an attempt to avoid yet another format battle, the FCC decided in 1993 to persuade the companies behind the competing American systems to come together in a Grand Alliance.

Consisting of General Instrument, AT&T, MIT, Philips, Sarnoff, Thomson and Zenith, plus Dolby for digital multichannel surround sound, the Grand Alliance developed an all digital standard that is able to support different HD formats.

There are two differing ways a HD picture can be constructed electronically: progressive (p) and interlaced (i). In progressive HD adjacent lines of a picture are scanned in succession, going in order from top to bottom. The image is displayed in a single pass instead of two, as is the case with interlaced. Although not compatible, interlaced is closer in nature to the older picture coding systems, such as NTSC. Interlaced scanning reassembles a picture from a series of electrical signals, with the odd and even numbered lines of the picture transmitted consecutively as two separate fields. The odd horizontal lines are sent first, followed by the even. Each pass takes one sixtieth of a second and the two fields are then combined as a single picture.

The two formats are seen as having different applications. Progressive looks better when digitally projected and so is the obvious choice for digital cinema. Interlaced is preferred by broadcasters because of its similarity to existing TV standards.

Complicated post-production, such as compositing, is easier in progressive than interlaced because there is less motion to track or paint around. The general consensus is that the majority of documentaries and dramas will benefit from the progressive look, while sport, concerts and other as live shows are better being shot interlaced.

The Grand Alliance HD system was designed to work at 720 active lines progressive, 1080 lines interlaced or 1080 lines progressive. The situation appears to have come down to 720p and 1080i. For shooting material and post-production Europe has decided to work in 25 frames per second (fps) progressive, usually just called 25p. America has opted for 23fps progressive (23p) at 98Hz and 59fps interlaced (59i) at 94Hz, which is also used in Japan.

Many individual broadcasters have decided on a specific rate for their own requirements, although there is the opinion that the middle rate of 24p is a good compromise.

The next Video Guide will cover the rollout of HD services during the late 1990s and early 2000s before examining the technology behind the format in greater detail. AM

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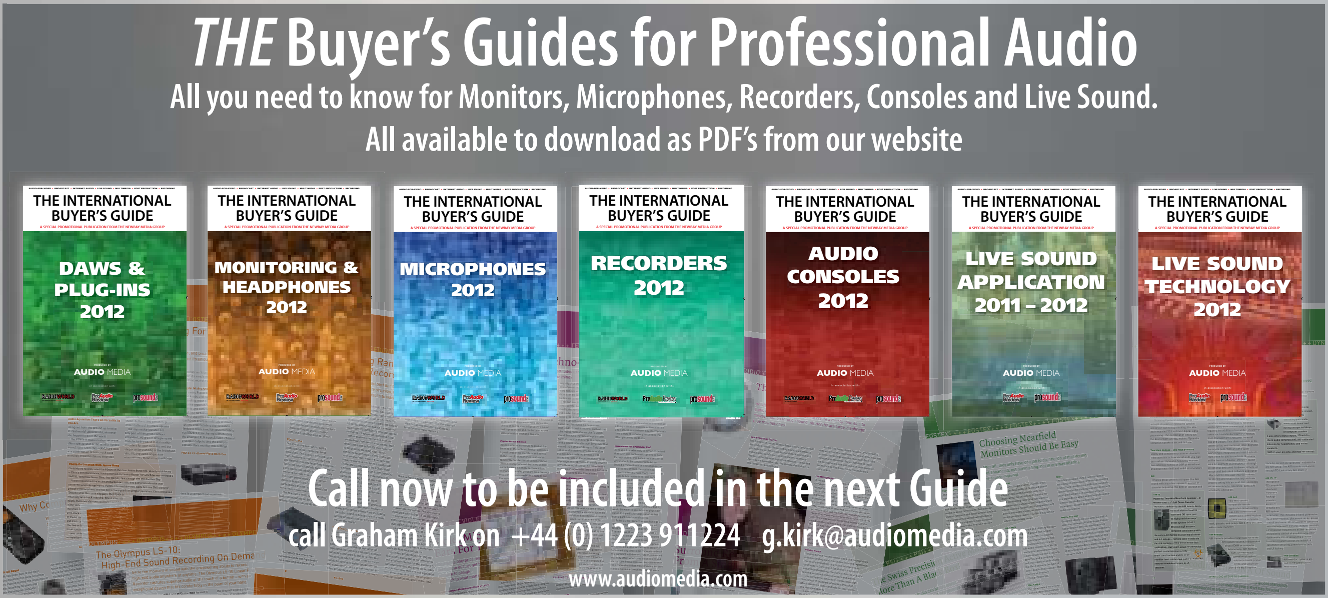
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Airplane!

KEVIN HILTON focuses on what must be the silliest aeroplane that movie-land has ever imagined. Proof that sound can be silly too...

THE SUCCESS of any movie spoof lies not only in how recognisable the target is but the accuracy of the jokes and their closeness to the oh-so-serious scenes in the films that inspired it. *Airplane!* (1980) is among the best in a now over-familiar genre, not just for its original gags but how the ludicrously po-faced and melodramatic scenes in the source material are exaggerated and held up for ridicule.

In *Airplane!* this is carried partly by the deadpan performances of veteran actors Lloyd Bridges, Peter Graves, Robert Stack, and Leslie Nielsen, none of whom had previously been noted for their comedic talent on screen, but a large part of the parody comes from small touches, including the use of sound and music.

It's A big Building With Patients

The opening has a plane tailfin cutting through clouds (in fact a model and cotton wool), accompanied by a pastiche of John Williams' theme from *Jaws*. Writers/Directors David Zucker, Jim Abrahams and Jerry Zucker (known collectively as ZAZ) say in their DVD commentary that this was added later in production to let the audience in on the joke.

After this Elmer Bernstein's main score takes over. Bernstein was known for both his jazzy scoring of 1950s TV series like *Johnny Staccato* and sweeping orchestral settings for widescreen epics including *The Magnificent Seven* (1960). ZAZ directed him to write a piece that sounded like it was from a B-movie; he delivered something that is big, portentous and pompous, which helps in sending up the bizarre genre of disaster films.

The 1970s were the heyday of these strange mixtures of melodrama, fantastical plotting, gratuitous but creaky special effects, overwritten dialogue and wooden acting. The surprisingly successful *Airport* series, based on the blockbuster novel by Arthur Hailey, is what most people would consider the inspiration behind *Airplane!* but ZAZ trace the roots of their film back to seeing a 1957 oddity called *Zero Hour!* on TV in the early '70s.

The Wrong Week To Quit Sniffing Glue

This was scripted by Hailey and focuses on what happens when the crew and most of the passengers on a routine flight succumb to food poisoning. Many of the lines in *Airplane!* were lifted directly from *Zero Hour!*, along with some of the character names. This also explains one of the film's best, and longest running, gags. ZAZ had originally wanted the action to take place on a propeller aircraft, as it does in *Zero Hour!*, but the studio insisted the setting should be contemporary, with a jet. The compromise was to have prop airplane sound effects accompany the exterior shots of the model Boeing 707 airliner, a joke that even today many people are not aware of.

The plot of *Airplane!* revolves around the efforts of former navy pilot Ted Striker (Robert Hays), who is now scared of flying, to win back his ex-girlfriend, stewardess Elaine Dickinson (Julie Hagerty). He ends up getting on her flight and, when food poisoning takes out the flight crew, he reluctantly takes the controls and earns Elaine's love and respect.

The jokes come thick and fast, visually, vocally, and sonically. ZAZ's love of old movies surfaces again in the scene where a soldier is saying goodbye to his girl. This was taken almost verbatim from a scene in the 1944 weepy called *Since You Went Away* that takes place at a railway station. Consequently a conductor appears to advise the man to get aboard; when Captain Oveur (Graves) on the flight deck engages the aeroplane engines, all the sound effects are from an old style American steam locomotive.

A Hat, Or A Brooch, Or A Pterodactyl

While much of the humour in *Airplane!* comes from being played absolutely straight, ZAZ are not above using obviously silly noises to emphasise a gag. During the flashback to show Ted and Elaine's meeting in a seedy dockside bar, he is enchanted by the sight of her dancing and tosses away his naval officer's hat, which comes back with a comic 'whee' to hit him on the head. A similar gag is used when he throws his jacket in a parody of John Travolta's dancing from *Saturday Night Fever* (1977). The accompanying Bee Gees track *Stayin' Alive* was varispeeded up, making it sound funnier.

> "The compromise was to have prop airplane sound effects accompany the exterior shots of the model Boeing 707 airliner, a joke that even today many people are not aware of."

There are countless extraneous noises and effects, from the off-screen explosion when trouble-shooter Rex Kramer (Stack) throws a cigarette out of a window to the typewriter sounds that bear no relation to how assistant air traffic controller Johnny (the desperately unamusing Stephen Stucker) is using the machine. When Striker advises stewardess Randy to sit down to be safe, she leaves the scene and almost immediately there is an almighty sound of crashing and screaming as something terrible befalls her.

Hamm On Five, Hold The Mayo

The conventions of old-style movies, and disaster films in particular, are wickedly caught in several sequences. Alone at the controls Striker is talking to himself in voice-over: "Got to concentrate." As is the norm in this cinematic situation the line has heavy reverb on it. Hays reacts with a puzzled expression and then says, again in voiceover, "Echo-oo-oo! Echo-oo-oo!". When Ted and Elaine are reunited at the end and kiss, a heavenly choir sings on the sound-track – but their pitch too high and stop abruptly, choking.

ZAZ later took on the TV detective genre in similar wicked style with the *Police Squad* television series and *Naked Gun* films, starring Leslie Nielsen. But all their groundwork – with performances, jokes, sight gags, and subversive sound combining in one big glorious send-up – was in *Airplane!*, surely?

...Yes it was – and don't call me Shirley. AM

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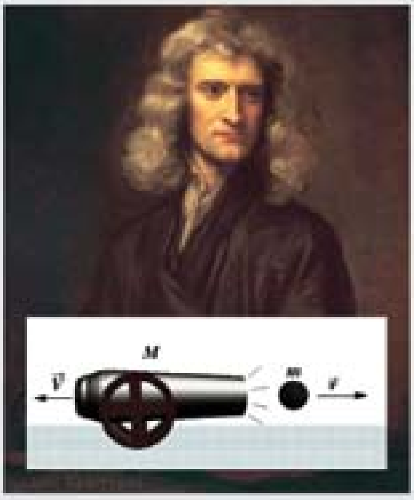
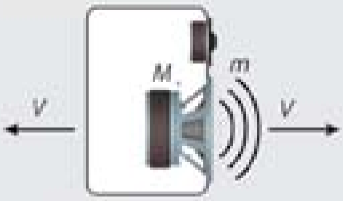
...Had Newton been an audio engineer, he would've used Recoils!



You've bought your new monitors, you put them on your desk and start to mix. However when you listen in your car or on other systems you notice that your mixes are not translating well – they don't sound the same as they did in your studio. Why?

Newton's third law of motion states "Every action is accompanied by a reaction of equal magnitude in the opposite direction."



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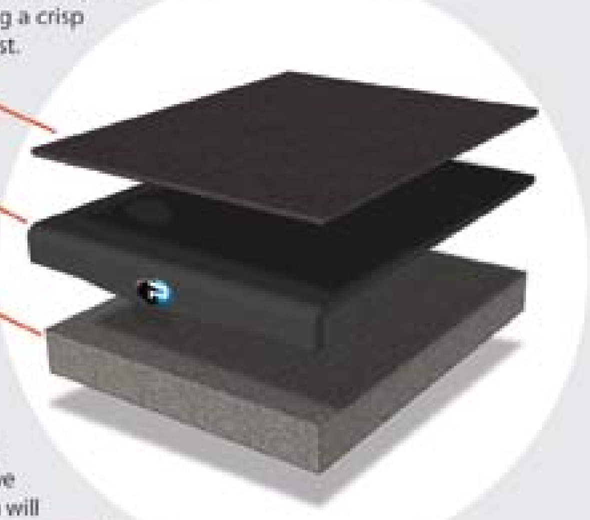
Some would say "just isolate the loudspeaker from the desk with a foam pad" but by doing so, you introduce a new problem—your speaker is now swaying back and forth unhindered on the foam, just as Newton said it would. Energy that could be producing a crisp kick or accurate bass is dissipated into the foam and is lost.



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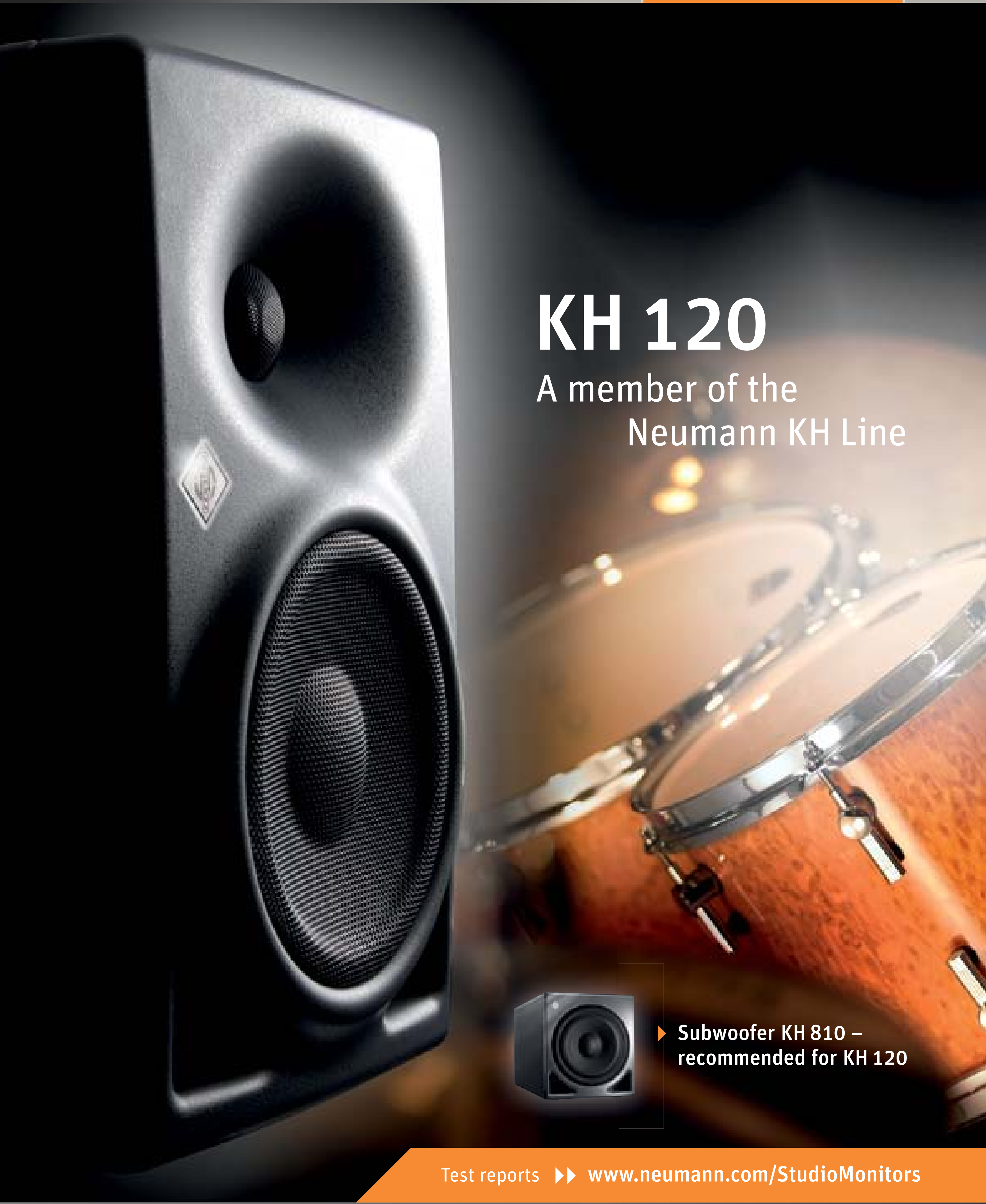

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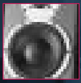
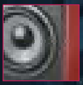

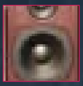
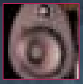

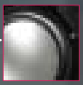

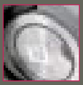

Welcome to Monitors & Headphones 2012, an overview of the professional monitor and headphone market for the production professional.

This is an updated and refreshed collection of promotional articles looking at 15 of the world's leading monitor and headphone manufacturers and their product ranges. Inside you'll find the stories behind the drivers – the ethos' and design ethics that go into producing these critical audio production components, and details of the products themselves.

Monitoring provokes much debate, much passion, and possibly more subjective wrangling than any other node in the signal chain. Whether it's the box, the magnetics, the materials, the electronics, the room, or even the ears that make the difference, the term 'reference' is never used lightly amongst those who rely on hi-fidelity, accurate and natural voicing, spot-on transients, and a little 'something' extra.

Hopefully this guide will provide a good foundation for your monitor and headphone buying homework during 2012, and push back the boundaries of your considerations. To complement the profiles, we've included an article that asks renowned Acoustician Andy Munro about the finer points of surround speaker placement, a set of five monitoring tips from audio pros, plus a special headphone primer feature with expert advice.

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++++SURROUND OPTIONS++++SURROUND OPTIONS++++SURROUND OPTIONS++++ SURROUND OPTIO

Surround options

Are you Blur or Oasis? Are you ambient, or direct? Of course, the first question might be better posed as 'music or film', but the simple matter of speaker positions does still seem to create some ill-reasoned loyalties and extraordinary myths. We turn to Andy Munro, to clear the whole mess up…

Setting up a surround monitoring system is fraught with issues – acoustic room treatment, bass management, and speaker positions are just a few. It's that last one that causes a special bit of confusion – particularly if your work isn't wholly music or wholly film sound. Of the myriad of surround speaker positioning protocols, it does seem that two are particularly prevalent: ITU–R BS.775–1, and the 'cinematic' set-up, with early detail in the Dolby Surround Mixing Manual. The main differences are the positions and angles of the surrounds. ITU has the surrounds on the imaginary circle around the listening position, angled directly at the sweet spot (all source equidistant from listener), while the cinematic version has the surrounds on the side walls, pointing inwards and positioned above the listener (thus the surrounds are more 'ambient' than 'direct'). Of course, there are more variations, especially when it comes to larger rooms and Dolby certification, and so on.

So this doesn't get out of hand, it's best to ask an expert. Andy Munro, of Munro Acoustics, has designed some of the most highly-rated surround rooms for both film and for music around the world. We spoke to him about not only the placement of speakers in a multi-channel environment, but also the philosophy of surround mixing in general. It seems that you can't think about monitoring without considering mixing… Which is probably as it should be.

Audio Media: Is the world reaching a consensus on surround system monitor positions or is it fragmented? Which should we choose and why?

Andy Munro: "It depends on the room as much as anything… If it's a music control room and it's a music mix, then I would definitely go for the ITU arrangement – the classic 5.1 with the surround speakers at 100-120 degrees from the normal zero angle. But if it's anything to do with post production or film and so on, then I would as much as possible try and go for the cinematic arrangement.

"The idea of the cinematic one basically is that the surround channels cover a much bigger area. The thing about the ITU arrangement is that there is a sweet spot – a mix position. Nobody else is going to get anything like a surround mix; so if you've got people sitting at the back of the room on a sofa or something like that then they're going to hear the surround speakers first, and then everything is going to be out, timing wise.

"With the cinematic set-up, no matter where you sit you hear the front speakers before you hear the rear ones, which as you can imagine isn't that easy in a small room.

"It's all to do with time delays really, and I think surround sound is very much misunderstood by a lot of music mixers because of that, whereas film people tend to understand it very well and are very subtle about their surround mixing. They tend to use a lot of reverbs and a lot of diffusion to 'de-localise' the sound.

"The best surround mixes, that I've heard in music anyway – which tend to come out of Nashville – use a lot of reverb and a lot of de-focusing on the rears. If there's one thing I cannot stand it's someone blowing a trumpet behind my left ear. I find it very disconcerting indeed… to the point where I really don't like listening to 5.1 in that way. I like listening to classical music in 5.1 if they somehow manage to capture the ambience of the hall and create the right reverb balance. It can sound fantastic.

"I remember hearing a Radio France transmission years ago that was, if I remember rightly, on a DTS or Dolby demo disk in the early days of DVD. It was so good it sent shivers down my spine. It was recorded in a cathedral in France and I thought 'that's it… if that's the way surround can be done then it's just going to be a huge success.' Unfortunately, apart from a few opera DVDs and so on, not many people are doing it.

"The speaker arrangements and all of that are really secondary to getting the concept right. Actually thinking, 'why do we have surround – why do we have multi-channel'? The whole point is to put you into a space. It's not to do circus tricks like in the old ping-pong days of stereo. The whole idea is to put you into a space and make you feel that you're there. That's it, that's the be-all and end-all of it. Okay, in the cinema you might have special effects like someone creeping up behind you or whatever, but that's very rarely used; and the reason it's rarely used is because it's very hard to get everybody to experience the same thing."

▸

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Wide 'Sweet Spot'
Hear what's going on in your mix
with stunning accuracy whether
you're turning your head or
reaching for coffee!

Sculpted Curved Edges
Greatly improves frequency
response delivering solid
imaging even when off-axis

Front Firing Ports
Allows for easier positioning within
small or confined studio spaces
without making your bass muddy

Discreet MOSFET Power
Unlike low cost Power ICs, our
Active MOSFET amplifiers deliver
much more punch and helps you
mix without running out of steam!

Reveal 501A

Reveal 601A

Reveal 601P

Building upon a world-class reputation from manufacturing loudspeakers and monitoring systems for over 80 years, the all-new Tannoy Reveal series represents the latest evolution of our high-resolution reference monitor technology.

If you're looking to equip your studio with an accurate reference monitor with a compact footprint, Tannoy has the perfect solution without the excessive price tag.

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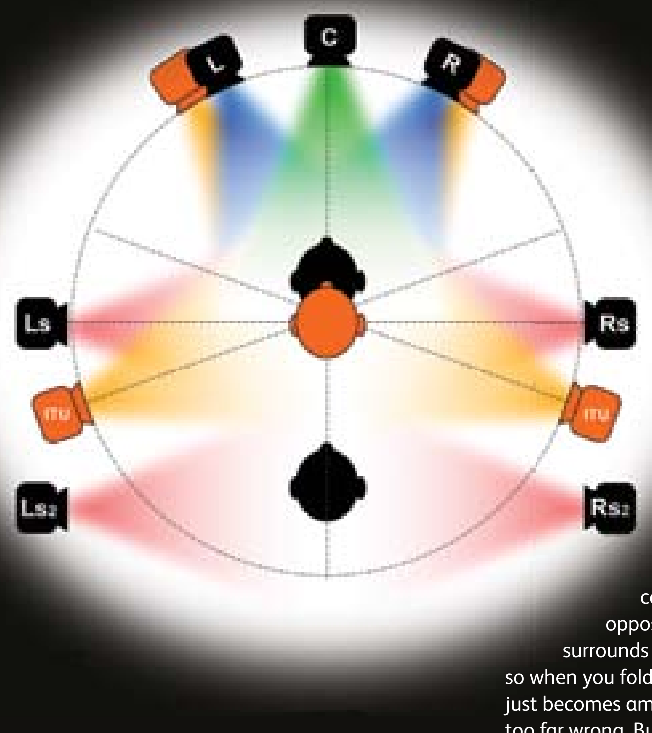


In the ITU (music) set-up, the surrounds are pointed directly at the sweet spot 'ears' at an angle of between 100 and 120 degrees from centre. time-aligned (equidistant) with the front speakers. In the film mixing arrangement, the surrounds are positioned above the listener and should not get closer to the listener than the front speakers, for a more ambient and sweet-spot-tolerant monitoring arrangement.

► **Audio Media: What would, for example, be the effect of doing a music mix on a cinematic set-up?**
Andy Munro: "You'd probably end up with more ambience. I'm assuming you're talking about a mix specifically for surround rather than one that's going to get folded down... That's the other thing. If you're going to do a mix that's got to be mono and stereo compatible you'd better make sure you're monitoring it as you go long so you don't create ridiculously phased mixes. But that's always the big danger with surrounds. If you fold it into the main mix it can all go horribly wrong.

"It's a tricky business. But the real trickiness is in the delivery of the product rather than in the studio.

"That's one of the good things about the ITU set-up. Because all the speakers are basically equal and equidistant to the mix point, if you're sitting at the mix point and you do your fold-downs – even with the bass management fold-down and so on – you can hear very well what the phase relationships are of all the five channels so you can actually hear if something is going wrong. So in a mastering situation I would definitely say use the ITU set-up with zero delays on each of the speakers so you do hear everything exactly in-phase at the mix position.

"As far as the cinematic set-up is concerned it's almost the exact opposite, where you want the surrounds to be as diffused as possible so when you fold them back into a main mix it just becomes ambience. That way you can't go too far wrong. But if you start putting discrete stuff into the surround channels and it's not timed right then you'll create all kinds of problems."

Audio Media: And problems become more acute when it comes to the bigger distances in theatres?
Andy Munro: "In the best theatres, for example, where they've got multiple pairs of surround speakers, each with their own time delays and everything is timed correctly you do end up with this quite pleasant mishmash of ambience. Because not only are the speakers you're hearing closest having the right time delay, all the other ones have a different delay so it's all kind of mashed together.

"In a small room or narrow room, especially where you're near the surrounds, quite a few people advocate the bi-directional speakers now, where the sound is firing to the sides and not directly at you. Basically, instead of having a single driver that's pointing forwards – a conventional speaker – you have two drivers aimed left and right. They are directing the sound away from the on-axis position. At the on-axis position they sometimes arrange it so you actually have a null.

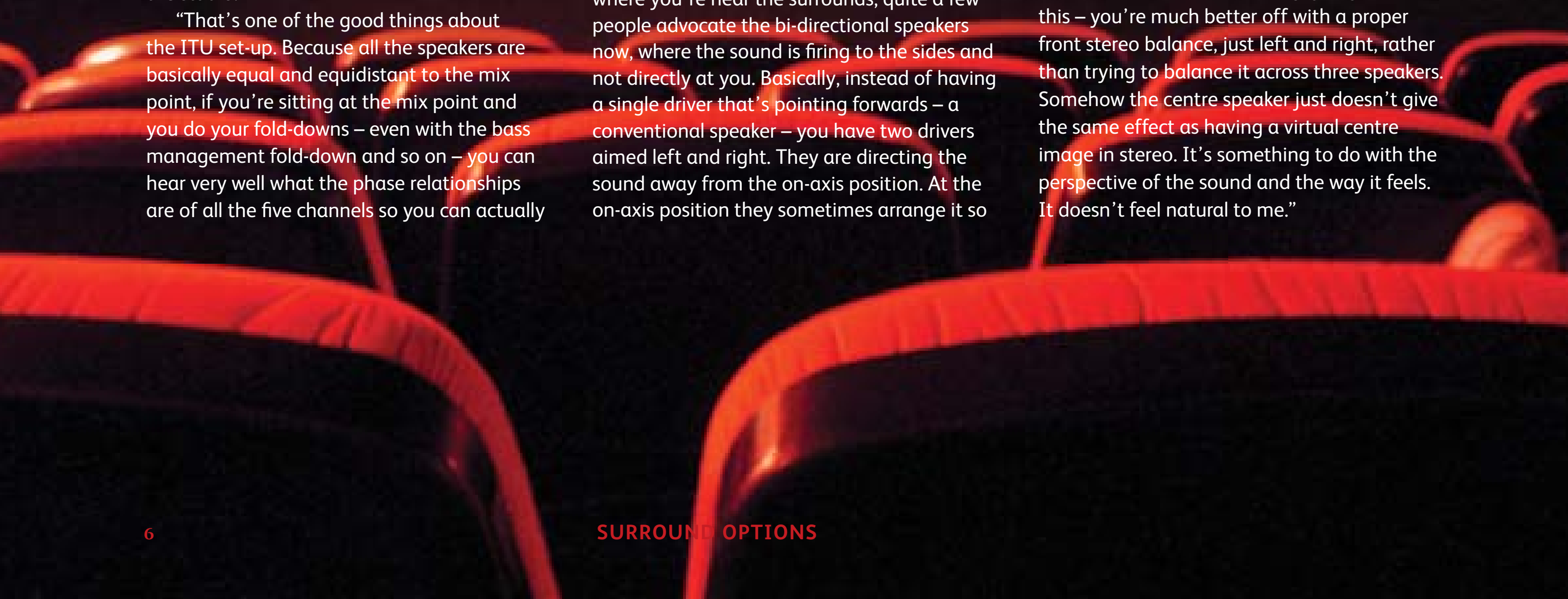
"I'm not saying that's necessarily a good thing, but sometimes it's a good way of getting diffusion and avoiding having a surround speaker fired straight into your ear.

"Of course, this is stuff that happens at the point of delivery – it's not necessarily something you'd want in your dubbing theatre."

Audio Media: If you were an audio pro who, like many these days are a jack-of-all-trades, doing a little bit of music, a little bit of sound-for-picture, and other things besides, which way would you swing – ITU or cinematic?
Andy Munro: "I'd go for the standard ITU set up, but I would also issue a big warning not to do anything too funky in the rear channels. Stick by the rules and keep it as diffuse as possible. If you can sit in the sweet spot and locate anything in the rear channels then you're probably doing it wrong. In other words, surrounds should be as de-localised as possible.

"That way, no matter where it's played back, it'll work. And at the same time, when you're doing that, check it doesn't all fold down into something that's got a huge hole in it."

Audio Media: Discrete or virtual centre?
Andy Munro: "The centre speaker in a big space does give you a very solid centre image. Whereas in a smaller space I actually prefer a virtual centre image. If I'm listening to classical music – and a lot of classical guys agree with this – you're much better off with a proper front stereo balance, just left and right, rather than trying to balance it across three speakers. Somehow the centre speaker just doesn't give the same effect as having a virtual centre image in stereo. It's something to do with the perspective of the sound and the way it feels. It doesn't feel natural to me."



ULTIMATE MONITORING

The IB2S XBD Active are serious monitors for serious applications. 4000 watts of cutting edge DSP controlled amplification teamed with PMC's ***ATL***™ bass loading technology deliver full scale dynamics and the ultimate level of resolution that you can trust.

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- *DSP driver optimisation & precision 24dB crossovers*

Also available in black and single 3 way cabinets

"PMC has succeeded handsomely in its quest to make an ultimate no-compromise monitor."

AUDIO MEDIA Jan '12

ATL™ bass loading technology offers the following advantages over ported monitors:

- Exceptional LF extension with no colouration
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- Higher SPL's without compression or listener fatigue
- 100% dependable

Where compromise is not an option but a compact solution is required, then PMC's DB1S-A*II*, TB2S-A*II* and the new IB1S-A*II* offer PMC's trademark resolution at all frequencies and all levels.

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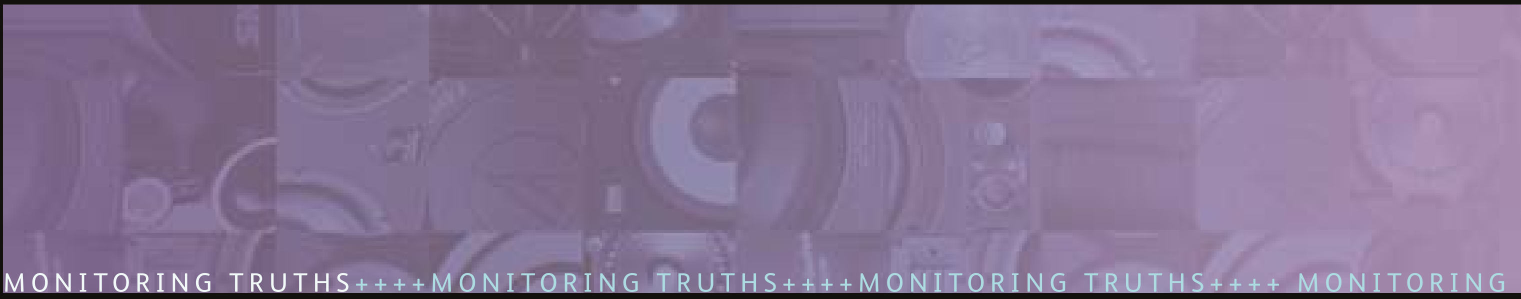
++++MONITORING TRUTHS++++MONITORING TRUTHS++++MONITORING TRUTHS++++ MONITORING

Five Truths Of Monitoring

Obviously there are many opinions, observations, debates and debacles to be had when it comes to the thorny subject of monitoring practice. Here are five bright lights amongst the fog...

1) Stands

There's an awful lot of rubbish talked about high end, really expensive, rubbed-against-the-thighs-of-virgins magnesium-alloy... What you want is a sodding great heavy thing to stand your speakers on – and it's no good putting it on a wonderful speaker stand, wonderfully linked up to a diaphragmatic wooden floor, because that's just the same. Although if your speaker stand is full of lead, it's then going to be quite heavy, so the resonant frequency of the floor membrane it's standing on is going to be much lower.

(David Bell, Whitemark Acoustics)

2) Room Plus One

A room and a pair of speakers should always be considered as a unit. Both influence what you hear, and the interaction between both influences what you hear almost as much as the choice of either. If you have a production space with free standing speakers and you put the speakers largely where they need to be, and symmetrically in the room, the room will interact with the speakers in a number of ways... You will have 'coherent interference'. This will cause notch filtering and is principally noted in the lower mid and upper bass, which is really where the character of voices is stored.

Even free-standing speakers ought to be set up by someone who knows what they're doing. You will get interaction between the walls, the ceiling, the floor, the speaker, and you. You need to optimise that. You can do this by listening to stuff you know well and adjusting the speaker position. Moving it six inches will make a huge difference.

(David Bell, Whitemark Acoustics)

3) Balanced Treatment

Everyone knows that you need acoustical treatment in your studio. This of course helps tame powerful first order reflections, which makes it easier to mix. But what few realise is that you can actually do more harm to your room than good if you do not balance the absorption. Think of your room as a three-way loudspeaker. When you use thin, low density foam, you will only absorb the high frequencies. In other words, you have now turned off the tweeter. You are left with a room that will be mid range and bass heavy. The trick is balanced absorption. When selecting absorptive materials, look at the sound absorption coefficients – not the numbers, but the graphs. This will tell you exactly what frequencies you will absorb. Make sure you also consider bass traps. With balanced absorption in your studio, your mixes will translate better when you move them to another room.

(Peter Janis, President, Radial Engineering Ltd)

4) Monitoring Levels

It's a good idea to use an SPL meter to check your monitoring levels. Most of us listen too loud, both for accuracy reasons and for health reasons. Spend US$30 on a Radio Shack SPL meter (the analogue one, not the digital one) and set it for 80/C weighted/Slow (you'll understand when you get it). Place the device near you, pointing at the speakers, then play some music at the level you usually play it at. The needle should be dancing between 0 and +6. If you peg the needle you're killing yourself and are probably delivering bass light mixes. If the needle is not moving you're either using a dead battery or you are one exceptional human being with phenomenal self-control on listening levels (and you're probably delivering bass heavy mixes too).

A good way to normalise monitoring levels and to deliver consistent mixing results is to use a reliable volume control. First you set a level for a mastered CD in the style you like to work in to hit the magic + 0 to +6 spot on the SPL meter. Memorise that volume knob position. Then play one of your unmastered mixes and set a position for that. It should be quite a bit higher because your mix is not (yet) limited to within an inch of its life like the mastered CD is. Now you have reproducible mixing positions: one for mixing and one for listening to mastered CDs, with the benefit that both will now play at the same SPL level. Only then can you really start comparing your work with the work of others without fooling yourself.

(FAB (puremix.net), c/o PDB Music)

5) Don't Be Fooled Again

Once upon a time there were big consoles to put things on, and that included the near-field monitors. The channels reflected bass and that fattened the bottom end, and the same surface caused mid-range comb filters that reduced mid-range. It was under these constraints that the NS10 became a truism rather than a reference of any great meaning. All speakers react to their immediate surroundings, and a monitor system should be measured and aligned for true sound balance. Try reversing the polarity of one speaker and listen to a mix. If you hear some bass and anything good, you have a problem!

Try to give monitors some space to radiate and always form a perfect (equilateral) triangle between them and you.

(Andy Munro, Munro Acoustics & sE Electronics)

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We carry the largest stocks of serious audio equipment in Europe. Our North London showroom is packed to the rafters with the best in outboard, microphones, consoles, convertors, DAW systems... and monitors.

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Brand New F Series: The ART of Affordability

In 2009, ADAM introduced the brand new X-ART technology, a refined version of ART to improve what many considered to be the benchmark in tweeter technology. In 2010 and 2011, ADAM brought to market the lower price AX series of monitors, including the A7X, successor to the A7, bringing the acclaimed ADAM sound to more professional engineers than ever before. Now, in 2012, ADAM takes that experience to the next level and proudly presents a new even more affordable entry line of studio monitors.

The Brand New F Series: The ART of Affordability

Consisting of two nearfield monitors and a dedicated subwoofer, the F Series is designed in the tradition of the legendary ADAM professional monitors. The aim is to focus on the essence of ADAM speakers at a new, lower price point.

The F7 and F5 nearfield monitors feature a newly designed version of the ADAM proprietary Accelerating Ribbon Technology. These tweeters reproduce the high frequencies with the very airiness, clarity, and detail ADAM is famous for. The high performance woofers are designed to seamlessly integrate with the tweeters' performance.

Wherever deeper and more powerful bass response is required, the SubF subwoofer comes into play. It has been specifically designed to match the F monitors and will perfectly complement them in any set-up.

The ART and X-ART Technologies at a Glance:

- Velocity transformation 4:1
- Extremely high efficiency
- Perfectly linear impedance
- Extremely flat phase response
- Excellent directivity characteristics
- Perfect magnetic shielding

F5

The F5 is the smaller of the nearfield monitors in the brand new F-series, and has been designed for listening environments with somewhat limited space. The F models feature a newly designed version of ADAM's highly acclaimed ART tweeter. Slightly smaller than the X-ART tweeter, it is the next step in this continuous evolution in tweeter design. As the name suggests, the F5 sports a five-inch woofer made from carbon and paper, and a 25mm voice coil. Despite the size of both the woofer as well as the cabinet, the F5 is capable of an astounding deep yet tight bass response.

F7

The A7X in the AX series is ADAM Audio's most popular model. With the F7, we proudly present a brand new speaker with the same dimensions and a similar sound quality, but at a new lower price point. The F7, too, features ADAM Audio's proprietary Accelerating Ribbon Technology, the most famous of all ADAM inventions, assuring for utmost clarity of the high frequencies. The seven-inch carbon/paper-midwoofer comes with a 37mm voice coil. It has been designed to perfectly complement the ART tweeter. It stars in both the deep registers and the musically crucial midrange.

SubF

The SubF is a small yet powerful subwoofer, housing a robust eight-inch woofer with a 1.5-inch voice coil. It is driven by a 150W (rms) ICE Power amp. This amp stays cool while handling maximum power levels, even if they are sustained. The SubF is an ideal match for both the F5 and the F7 monitors wherever a deeper and more powerful bass response is required.

A Range of X-cellence: The AX-Series

When introduced in 2010, the AX-Series included four high performance systems, ranging from the ultra-compact and fully professional A3X to the four bigger models, the A5X, the award-winning A7X, A8X, and our newest AX model, the horizontally designed A77X.

All models feature the X-ART tweeter.

Compared to its predecessor, the legendary ART tweeter, the X-ART is even more efficient (96dB/W/m) and handles higher SPLs along with a frequency

The AX-Series Reviewed:

The AX monitors have been reviewed numerous times by magazines around the globe. Here are some excerpts:

A3X

"… the ADAM A3X is without a doubt the best compact speaker in this price range." (Audiofanzine, *01/2011*)

"…I don't know any other speaker for around 400 Euro the pair that could rival the A3X. To my mind they are wolves in sheep's clothing […]." (Hoererlebnis No. 76, *2011*)

A5X

"The A5Xs have a small footprint, but they sound like giants.." (SonicScoop.com, *01/2012).*

"… compact studio monitor with a unique and high definition sound character." (Amazona.de, *01/12).*

A7X

Sound On Sound awards: Best studio monitor in 2010 and 2011.

"This is just what you want from a nearfield monitor." (absolutemusic.co.uk, *03/2012)*

"Considering the sonic capabilities and a price tag of 499 Euro per speaker you can call these monitors a bargain." (Hifi-Stars, *09/2011)*

A8X

"These speakers tend to transform favourite songs with a hitherto unheard clarity. The combination of the 220 mm mid/low woofer and the X-ART AMT let this speaker sound powerful and detailed at the same time." (Audio Test, *02/2011)*

A77X

"I like the A77X a lot and they make a refreshing change from the usual mid-priced near-field speakers." (Audio Media *magazine, 02/2012)*

response up to 50kHz. Furthermore, all AX-Series woofers and amplifiers have been re-engineered from scratch, with larger voice-coils and more powerful amplifiers for greater linear excursion and more output.

State of the ART: SX-Series

The 10 models of the SX-Series were introduced in 2009 and 2010. They are based on the highly acclaimed S-Series. However, they are not a simple revision of existing models but a fundamental transformation with no details having been overlooked and every sound crucial aspect having been evaluated. All transducers, drivers, and electronics have been redesigned.

The result is much more than an improvement, it is a quantum leap in professional monitoring. The SX-Series of monitors are some of the most sought-after products in the industry and are used as reference monitors in studios all around the globe.

A Wide Range of Subwoofers

Our subwoofers are dedicated to ADAM Audio's primary goal: the best possible authenticity in the reproduction of music. For our subwoofers, this means combining power and precision while simultaneously avoiding 'impressive' bass volume at the cost of accuracy. Their task is it to complement the highly acclaimed lucidity and transparency of the ADAM monitors in the lower and lowest frequencies.

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The Truth, The Whole Truth, And Nothing But...

The BM Series family.

Dynaudio Professional monitors are designed to speak the truth. You get exactly what you need for your mixing – an exact reproduction of your mix – no more, no less.

Superior Tools for Critical Monitoring

In film, post, gaming, broadcast and music productions, consistency, predictability and reliability are key. Add to this networkability and central control, and you'll know why studios throughout the world rely on Dynaudio Professional technology.

Choosing Dynaudio Professional, you not only get 20 years of innovative speaker and driver technology, you also get integrated TC Electronic digital signal processing. This combination offers you the best of both worlds, making Dynaudio Professional speakers second to none.

Three Main Ranges – One High Standard

Clarity and consistency come as standard – the question is, how versatile do you want your set-up? Dynaudio Professional has two extensive ranges of DSP-powered and analogue near-field and mid-field monitors: the AIR series and the BM series, including the brand new Desktop Monitor DBM50. Further, for ultimate main monitoring solutions, you should go for the M series.

AIR 12

Powerful two-way near-field speaker – 8-inch Woofer and 1.1-inch soft dome tweeter. The latest addition to the AIR family. AIR12 suits all sizes of control room and OB vans, and its high-precision amp/ driver system (+/- 0.2 dB accuracy) ensures complete consistency with the entire AIR family in a variety of stereo and 5.1 set-ups – remote controllable via the AIR Remote or the included AIR Soft application. DSP room adaption allows for perfect customisation for any room construction and its inter-monitor level calibration feature ensures consistent levels in all sessions.

AIR

It makes great sense to compare the AIR sound with any other speaker you own or are considering acquiring. We both encourage and support this. Contact your dealer or our representative in your country to arrange a demo.

Bear in mind though, that an AIR system is not really comparable to conventional monitors. On top of ultimate precision and sound, an AIR system offers flexibility and convenience previously unknown in monitors. Achieving similar functionality and features from conventional monitors requires the addition of a number of external boxes such as Monitor Matrix Controller, Bass Management Crossover, external EQs and delays. This obviously adds to the system price, and moreover often degrades the signal path. With an AIR system everything is integrated and matched – it's right there for you to use from the menu on the front of a master-module speaker via a 32-segment LCD display, or through an optional dedicated hardware remote, or an optional dedicated software application (Mac and PC). The user interface allows for storing and recalling factory and user presets taking into account THX and Dolby recommendations, reference levels, IFE sensitivity and so on.

THX Certified

AIR monitor systems are THX certified for use in PM3 rooms.

BMC-2 – How Pro Can You Go?

BMC-2 is TC Electronic's latest digital audio conversion and monitor controller. With it you can enjoy the luxury of controlling your audio levels at all times and during unexpected drops or computer crashes. It also offers digital inputs, iCheck (to check audio compression), and calibrated listening for headphones and active speakers.

BMC-2: your pro DAC and monitor control!

M3XE

M3XE is the ultimate main monitoring solution, combining world-class driver and cabinet technology from Dynaudio Professional with cutting-edge signal processing and amplification from Lab.gruppen, Lake, and TC Electronic. The Dynaudio Professional M3XE monitor system takes monitoring to a whole new level with a significant upgrade from its predecessor – the renowned M3A 3-way monitor. To top it off, the speakers are powered by two of Lab.gruppen's highly esteemed PLM10000Q amplifiers.

Award-Winning Speaker Technology

Don't just take our word for it. Over the years, Dynaudio Acoustics monitors have won numerous prizes and awards.

AIR 12

- 2009 Remix Technology Award in the Monitor/Speaker category

BM 12A

- 2008 Remix Technology Award in the Monitor/Speaker category

BM 6A

- Future Music's Gear of the Year 2001 Award

- Future Music's Platinum Award 2001

BM 6A mk II

- Electronic Musician 2008 Editors' Choice Award in the Monitor Speaker category

- 2007 TEC Award nomination in the Studio Monitor Technology category for Outstanding Technical Achievement

AIR series

- Producción Audio – for Best Studio Product of the Year 2003

- m.i.p.a. 2003 Award in the Nearfield Studio Monitor category

Recognition like this goes to show that great products can help produce great art, as Dynaudio Acoustics monitors are used by the most demanding studios, engineers, producers, and production environments throughout the world. The list counts:

- Apple Audio Labs, Cupertino/California and Paris/France
- BBC Radio & Music, London, UK
- Danish Broadcasting Corporation, Copenhagen, DK
- Vienna Symphonic Library, A
- Paragon Studio, Nashville, US
- AIR Studios, UK
- Half HP Studio, JPN
- Sony DVD Center Europe, A
- Abbey Road Studio, UK
- ESP Studio, JPN

…and many more.

Sporting the newest and most pristine Dynaudio ESOTAR^2 driver technology, M3XE takes over where most other monitor systems give up. With unsurpassed attention to detail, underpinned by an impressive 20Hz-22kHz frequency response and beyond 133dB SPL, M3XE leaves no room for desire in terms of resolution, range, or sheer power.

The cutting-edge combination of Lab.gruppen, Lake, and TC Electronic processing technology forms the ultimate backing for M3XE and ensures unlimited power and the tools for optimising any room to become the perfect listening environment.

In short, M3XE surpasses any and all main monitor expectations!

DBM50

The perfectly angled desktop monitor featuring a 7.1-inch woofer and a 1.1-inch soft dome tweeter. From the handcrafted Dynaudio drivers to its beautiful exterior, DBM50 is specifically engineered to perfectly reproduce your desktop mixes, and truly represents a revolutionary new angle in desktop mixing. Another key factor that puts DBM50 in the front seat is sheer quality. Each and every one is handcrafted in Denmark with attention to even the tiniest detail. Further, DBM50 comes with the option of adding a sleek controller that puts you squarely at the helm of volume control in any situation. You can set and manipulate levels with precision and ease, completely independent of your computer or DAW. The DBM50 controller provides perfect tracking, which guarantees spot-on stereo imaging and unrivalled precision.

BM

The BM monitors – both in their passive and active forms – are clean, powerful, and accurate monitors delivering excellent results every time. The sound is always transparent and crisp ensuring the most realistic listening conditions for a wide array of applications. Comprised of renowned Dynaudio driver technology, these monitors have become the standard when it comes to high performance and transparency. In combination with the subwoofers, the BM series is also very well suited for multi-channel facilities.

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++++FOCAL PROFESSIONAL++++FOCAL PROFESSIONAL++++FOCAL PROFESSIONAL++++ FOCAL PROFES

Listen to Your Music, Not to Your Speakers

These few words embody the philosophy of Focal Professional, the French manufacturer of acoustic loudspeakers and transducers. From their very beginning on the drawing board in Research & Development at Focal, our professional monitors are designed to deliver one thing, at any cost: the absolute acoustic truth.

Focal Exclusive Technologies

The ‘W’ Composite Sandwich Cone

Focal has been developing composite sandwich cones for the last 15 years. The fruit of that research, the ‘W’ structure (glass/foam/glass) used in every Focal Professional product, allows for a truly optimised response right from the start, thanks to the precise control of rigidity, weight, and damping capacity of the cone. The balance between these three fundamental and often contradictory parameters is the very basis of the exceptional sonic neutrality of our speakers.

The Be Tweeter

Since the very beginning, Focal has favoured inverted dome tweeters, but the introduction of the pure Beryllium dome, capable of covering five full octaves from 1,000Hz to 40kHz, has simply revolutionised high frequency spectrum reproduction. This tweeter’s capacity to go as high as 40kHz without any artifacts enables it to reproduce high frequencies with unmatched speed and transparency. At first the pure Beryllium tweeter was only available on the very high-end digital speakers of the Focal Professional line (SM11), but now it is also featured on the SM6 series, allowing an unprecedented price/performance ratio.

SM9 series

The REFERENCE Three-Way Monitor

The SM9 was born out of a simple idea: create the most sonically transparent monitoring system ever built. The SM9 features a frequency response from 30Hz to 40kHz with an SPL max of 116dB. This monitoring speaker establishes itself as a reference thanks to the precision of the stereo image, its capacity to reproduce each of the micro details of the audio signal, as well as unconditional respect of the original dynamics.

2012 m.i.p.a.

Two Monitors In One!

One of the major innovations of the SM9 lies in its offering two monitoring speakers in only one, unique cabinet. The activation of this monitor is made by setting off the FOCUS mode on the side panel. The two-way monitor (Beryllium tweeter + 6.5-inch W woofer) offers a frequency response from 90Hz to 20kHz, allowing you to check the mix transfer quality on systems with limited frequency response in bass frequencies such as:

- TV sets
- Computers
- Cars
- iPod® docks or any multimedia system.

This monitor also allows you to check the midrange register – very hard to equalise and balance in terms of sound level compared to other information contained in the audio signal.

The Focal Professional Monitoring Range

Looking for the Ultimate Tool

SM6 Series

The now famous SM6 series has been developed for professional engineers who are seeking absolutely neutral sound and sound stage precision for recording, mixing, and mastering studios. The SM6 series is composed of three references: Solo6 Be, Twin6 Be, and Sub6.

Solo6 Be

Two-way, analogue professional nearfield monitor (150 + 100W RMS Bash® technology), 6.5-inch ‘W’ composite sandwich cone driver, one-inch pure Beryllium inverted dome tweeter. Frequency response (+/-2dB): 40Hz- 40kHz. Max SPL @1m: 113dB.

Twin6 Be

Three-way, analogue professional nearfield/ midfield monitor (2x150 + 100W RMS Bash® technology), 2x6.5-inch ‘W’ composite sandwich cone driver, one-inch pure Beryllium inverted dome tweeter. Frequency response (+/-2dB): 40Hz-40kHz. Max SPL @1m: 115dB.

Sub6

Analogue subwoofer (1x350W RMS Bash® technology), 11-inch ‘W’ composite sandwich cone subwoofer. Frequency response (+/-2dB): 30Hz-250Hz. Max SPL @1m: 116dB.

SIONAL++++ FOCAL PROFESSIONAL++++ FOCAL PROFESSIONAL++++ FOCAL PROFESSIONAL++++ FOC

They have chosen Focal Professional

I now mix on a pair of Solo6 Bes, and the other two rooms at FLUX Studios have Twin6 Bes. Besides the phenomenal translation from studio to real world, which other monitors lacked, the sheer absence of distortion allows us to work very long hours without getting tired or losing perspective. We work faster, better, and with less recalls than we did before we switched to the Focal system. There is no way back.

Fab Dupont
(Sound Engineer – Shakira, Jennifer Lopez, Nat King Cole)

I mix on the Focal Solo6 Be now. This was the first time I used Solo6 Be for a project, but it came out spectacularly. I was really impressed by these speakers. What you put in to the Solo6 Be, you get out: very accurate. I have played the Slash mixes for many people and they are great – and of course give me all the credit. They don't know that my secret weapon was the Solo6s. I love my new Focal Solo6 Bes, and you will have to pry them from my cold dead hands in order to take them away from me…

Ken "Pooch" Van Druten
(Sound Engineer – "Live From The Roxy" Slash, Kiss, Limp Bizkit, Linkin Park – three nominations for Grammy Awards)
www.poochresume.evilentertainment.net

Forget all about my gear and toys, the most critical element in my studio is my loudspeaker… To me, there's no better nearfield loudspeaker than the Solo6 Be, whatever the prices of other monitors.

David Kutch
(Mastering Engineer – Alicia Keys, Natasha Bedingfield, Al Green, Erykah Badu, Estelle, Outkast, and many more)

The Twin6 Be monitors are the best that I've used in terms of studio-to-consumer listening translation. They really translate: what I hear in the studio is what the outside world hears, in my experience. Listening back to mixes I've done on the NS10s through the Focal Professional, it kind of scares me because I hear top-end distortion that I wasn't hearing in the NS10s – I was so used to using them, I thought I knew them. With the Focal Professional there wasn't a learning curve, it actually spooked me at first.

Jeff Juliano
(Sound Engineer – James Blunt, John Butler)
www.myspace.com/jeffjuliano

My Focals are clear and detailed. Great for long listening sessions!

Ken Nelson
(Coldplay Producer)

CMS Series

The CMS line is particularly dedicated for use in post-production studios, small listening rooms, radio studios, and home studios. The CMS series has been awarded Best Studio Monitor twice in 2009 (CMS 50) and 2010 (CMS 65), and both received the MIPA award during Musikmesse 2009 and 2010 from 110 worldwide pro audio magazines.

CMS 40

Two-way, analogue professional nearfield monitor (25 + 25W RMS class AB), four-inch Polyglass cone driver, one-inch aluminum-magnesium inverted dome tweeter. Frequency response (+/-2dB): 60Hz-28kHz. Max SPL @1m: 97dB.

CMS 50

Two-way, analogue professional nearfield monitor (80 + 50W RMS class AB), five-inch Polyglass cone driver, one-inch alumnium-magnesium inverted dome tweeter. Frequency response (+/-2dB): 55Hz-28kHz. Max SPL @1m: 107dB.

2009 m.i.p.a.

CMS 65

Two-way, analogue professional nearfield monitor (100 + 60W RMS class AB), 6.5-inch Polyglass cone driver, one-inch aluminum-magnesium inverted dome tweeter. Frequency response (+/-2dB): 45Hz-28kHz. Max SPL @1m: 112dB.

2010 m.i.p.a.

CMS SUB

Analogue subwoofer (1x300W RMS Bash® technology), 11-inch Polyglass cone subwoofer. Frequency response (+/-2dB): 30Hz-250Hz. Max SPL @1m: 113dB.

FOCAL

UK Distributor
SCV London Ltd.
t +44 (0) 208 418 1470
w www.scvlondon.co.uk

For a complete list of distributors:
w www.focalprofessional.com

GENELEC++++GENELEC++++GENELEC++++ GENELEC++++ GENELEC++++ GENELEC++++ GENELEC+

Award-Winning DSP Loudspeakers with AutoCal™ for all Environments

The introduction of DSP technology into the audio industry has begun a technology revolution in the sector. Genelec DSP products are recognised as leading the field.

Since their introduction, Genelec's DSP loudspeakers and subwoofers, along with the GLM™ control software, have received many awards and glowing reviews from the professional audio community. Many features have been highlighted, but what has stood out for many is the practicality of the independent control network; the features and functions of the GLM™ software (proven in the most demanding and prestigious applications); and the power of the AutoCal™ calibration function – a feature that has saved the day for many users having to work in unfavourable acoustic environments.

The Genelec range consists of both two and three-way models. The three-way series is designed for mid-sized rooms and the models in the range, the 8260A and 1238CF, have between them picked up numerous industry awards. The latest addition to the range is the 1238CF which, in its short time on the market, has already attracted major industry recognition through winning 'Best Studio Monitor' in the Audio Pro International Awards 2011, as well as picking up the award for 'Outstanding Technical Achievement, Studio Monitor Technology' at the 27th Annual TEC Awards.

1238CF

The 1238CF is designed for a wide range of professional applications demanding excellence in audio monitoring. The new model builds on the previous strengths of our compact three-way analogue monitors and by adding DSP, digital signal processing, with Genelec AutoCal calibration functionality the product has the widest possible appeal and audience.

The 1238CF is also compatible with proprietary Genelec Loudspeaker Manager™ (GLM™) control software and can be combined with Genelec 8200/7200 Series products in the same control network. The automatic control and calibration functionality provided by the GLM™ software with the Genelec AutoCal™ algorithm allow for precise matching of the loudspeaker system to different acoustic conditions with just a few mouse clicks. The rugged amplifier unit is mounted into the enclosure with vibration isolators, which also act as quick release hinges making maintenance operations very easy and straightforward. Furthermore, the loudspeaker cabinet is constructed of painted MDF, which is heavily braced to eliminate structural resonances.

The Directivity Control Waveguide™ (DCW™) Technology developed by Genelec provides excellent stereo imaging and frequency balance even in difficult acoustic environments. The DCW™ of the 1238CF is identical to the one in the famous 1038B three-way monitor, providing the same excellent imaging in this new addition to the DSP three-way monitoring systems range. It is designed to perform well both as a free-standing monitor and flush mounted into the control room wall. When flush mounting the loudspeaker, the space behind the loudspeaker enclosure must be sufficiently ventilated in order to dissipate heat generated by the amplifier unit located at the back panel of the loudspeaker.

8260A

The 8260A three-way DSP monitoring system is regarded as a leading active loudspeaker on the professional market. As a winner of multiple industry awards and accolades, it offers all the sonic benefits of a three-way system in a compact enclosure. With a three-way system higher sound levels can be achieved due to the separate mid-range channel, which can be optimised for that frequency range. This improved performance usually comes at the cost of having to make a larger enclosure. A small enclosure does not have the space for directivity control in the mid-range and at high frequency, which results in more audible room effects, whereas a larger three-way enclosure allows for proper DCW™.

Genelec's proprietary directivity waveguides (DCW™) with spaced mid-range and tweeter drivers have become an industry standard. The continued work on maximising enclosure space saw the development of a new coaxial driver that gives the 8260A its mid and high-range frequencies and improved directivity control.

The Genelec MDC™ (Minimum Diffraction Coaxial) benefits from typical coaxial design advantages while also overcoming their shortcomings. This is done by taking a simple approach: tackle the problem at its root. The main structure of the MDC™ tweeter-mid-range consists of an integrated MF diaphragm-suspension tweeter. The visible part of the coaxial driver is formed by the curved flexible foam surface with the dome tweeter assembly at its centre. There is no conventional spider, and the suspension is made of foam over the entire cone. Inner and outer suspensions are dimensioned to eliminate possible non-linearities and create a linear total suspension system.

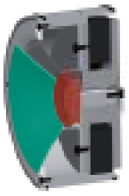
The 8260A combines for the first time a coaxial driver (MDC™) within a modern waveguide (DCW™) ensuring drivers couple coherently over their full operating bandwidth, as well as being a single MF/HF coincident point source. The inner section joins the cone to the tweeter structure without any acoustical discontinuity, and the outer one does the same between the cone and the driver chassis. In this way there are no acoustically observable discontinuities between the tweeter and the cone and no diffraction either. The cone profile is optimised to form an integrated directivity control waveguide for tweeter radiation.

This revolutionary coaxial design provides improved imaging and overall sound quality both on and off axis swell as an extremely smooth frequency response, leading to outstanding clarity and definition of the inner details of the music being played.

Since the founding of Genelec in 1978, professional audio monitoring has been at the core of the business. An unrivalled commitment to research and development has resulted in a number of industry firsts and established Genelec as the industry leader in active monitors. Nearly 35 years later Genelec monitoring products remain true to the original philosophy, offering reliability, neutral sound reproduction regardless of size, as well as the ability to adapt frequency response to the listening environment. Genelec clients receive paramount support in all aspects of the field, from acoustical advice and calibration services to technical service and long product life span. Buying a Genelec product is the soundest investment in audio monitoring.

Genelec SE™ DSP System

The Genelec SE™ (Small Environment) DSP System brings a new approach to solving many acoustic issues associated with small recording and mixing environments. Smaller production rooms beg for sensible solutions in monitoring. The SE™ DSP System brings easy to use and affordable Genelec quality to this wide range of customers. The system utilises the new 10-inch SE7261A DSP subwoofer in combination with the 8130A digital input active monitors. The SE™ System easily configures to all popular audio configurations from subwoofer-assisted stereo to multi-channel reference systems. GLM.SE™ software control of the SE7261A DSP subwoofer provides all necessary network connections to the host computer and supplies extensive DSP resources for the 8130A digital input loudspeakers through its AES/EBU digital outputs.



Monitoring Tools

The most critical listening conditions require the most advanced monitoring tools. The marriage of an outstanding analogue system performance with the breakthrough technologies of DSP, Genelec Loudspeaker Manager™ set-up and installation software, and AutoCal™ automated self-calibration algorithm allow ultimate refinement of sound reproduction in modern control rooms and an unsurpassed accuracy, even in acoustically unfavourable monitoring environments.

The GLM™ Software provides all the necessary means to set-up, calibrate, and control the system set-up. It features a sophisticated graphical user interface and offers acoustic calibration and system alignment through the AutoCal™ function – the industry's first integrated process for complete automated measurement, analysis, and adjustment of every monitoring loudspeaker in the control network for both PC and Mac platforms. AutoCal™ uses a factory-calibrated Genelec acoustic measurement microphone that helps sets levels, distance compensating delays, phase (for subwoofers), and room response equalisation. An Interactive Response Editor provides visual readout of measured and corrected response curves, as well as full manual editing of acoustic settings

Genelec DSP Systems have won the TEC Award for outstanding achievement in the category of Studio Monitor Technology four times: 2007 (8200/7200 Series), 2008 (GLM.SE System), 2010 (8260A Three-Way DSP Loudspeaker), and 2011 (1238CF Three-way DSP Loudspeaker).

Since the founding of Genelec in 1978, professional audio monitoring has been at the core of the business. An unrivalled commitment to research and development has resulted in a number of industry firsts and established Genelec as the industry leader in active monitors. Nearly 30 years later Genelec monitoring products remain true to the original philosophy, offering reliability, neutral sound reproduction regardless of size, as well as the ability to adapt frequency response to the listening environment. Genelec clients receive paramount support in all aspects of the field, from acoustical advice and calibration services to technical service and long product life span. Buying a Genelec product is the soundest investment in audio monitoring.

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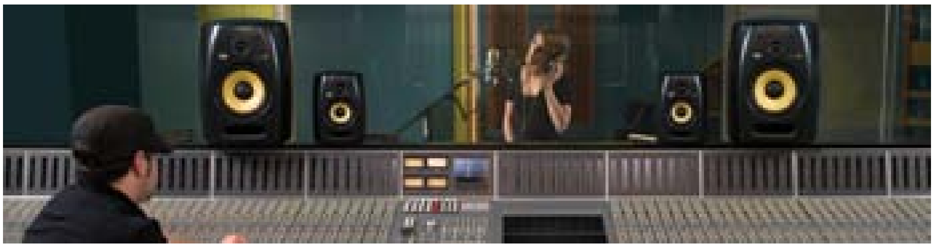
Our Focus. Your Mix.



KRK is driven by a design philosophy of accuracy, transparency, and flat response. Our products deliver on this promise through a combination of solid design and product innovation. KRK monitors are tools that are cherished by their owners as partners in crafting great music and mixes.

Honest Voices. Straight Talk.
A studio monitor is a tool used to aurally 'measure' the changes in an audio path. Ask any seasoned recording professional what they think makes a great studio monitor and you'll get basically the same answer: "Accuracy, transparency, flat response, and the truth." In other words…honesty. Simply put, recording engineers want the electrical signal entering their monitor to be reproduced mechanically by the transducers and they want this to occur without any deviation or compromise to the original signal. Professionals depend upon their monitors to deliver their artistic vision in a way that will translate as accurately as possible to a variety of audio mediums. The following four music professionals have honed their craft of creating music and in turn they are offering their honest voices about studio monitors.

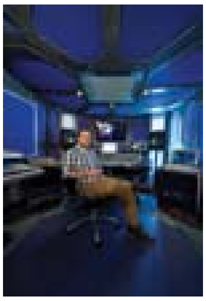
Jacquire King – Record Producer/ Mixer/Engineer

When something works, why switch? King is a 2009 Record of the Year Grammy Award winner with Angelo Petraglia for the Kings of Leon's *Use Somebody*. "For monitoring, I've used the KRK Rokit 5's for a little more than four years. I was using NS-10s in the tracking studio at the time. I'd been looking for an alternative and soon after got a pair of the Rokit 5s. These monitors are true and consistent. They are not hyped sounding and make you work for a great result, which I like. They have plenty of bottom-end and when the mix is sounding huge on them then I know I'm finished."

Henri 'MGI' Lanz – Producer/Songwriter

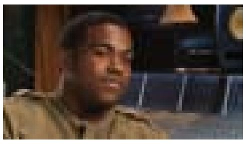
This Finnish born, 25-year-old producer/ songwriter is a perfect example of a modern hit maker. MGI has produced and written songs for and with Akon, Sean Kingston, Timbaland, Pitbull, Justin Bieber, Jim Jonsin… and the list goes on. His productions include various Gold and Platinum selling records all over the world. "I've used KRKs for about two years now. When I first heard them, I really loved the way the VXT series sounded. No matter what the location is I need to be 100% sure how the mix is going to sound wherever I am."

Chris Young – Producer/Songwriter



"I'm primarily a producer/songwriter," says Young, and for the past six years, he has been running his own Chestnut Studios in London. When he installed an SSL desk he knew he had to make a step up in monitors as well, choosing the KRK Expose E8B studio monitors. "I actually tried different monitors, but KRK won hands down," says Young. "The biggest thing for me is I can listen through the studio monitors to a mix and then go elsewhere and not suddenly find that things have changed dramatically." Young also uses KRK VXT6 monitors at a smaller home studio he uses for writing, along with KRK KNS 8400 headphones that gives him a sonic consistency between studios.

Rodney 'Darkchild' Jerkins – Producer
After 15 years in the business and a string of successes with artists like Lady Gaga, Beyoncé, Britney Spears and Mary J. Blige, Rodney 'Darkchild' Jerkins is a voice of experience. A KRK user for almost a decade, his studios in L.A., New Jersey, Florida, and at his home all feature a mix of Expose, VXT, and Rokit monitors. "I look for something that's tight, that's punchy, that still has the low-end, but still has the pristine clarity up top. KRK is literally is the foundation of my sound."



The Popular Rokit Line Expands with the RP 10-3 Three-Way Mid-Field
The Rokit RP10-3 is a mid-field three-way monitor system in a compact form factor and at a breakthrough price that delivers loud and accurate sound reproduction to satisfy professional needs. The RP10-3 will suit commercial facilities as well as space and budget conscious private studios. The 'pro-studio' appearance of this monitor will visually impress, and the high SPL output makes it capable of handling challenging high-dynamic tracks for all genres of music. As part of the KRK Rokit Series of monitors including the Rokit 5, 6, and 8, the Rokit 10-3 adds true mid-field performance to give studios the creative edge.

"Notable is the design feature that enables the user to reconfigure the drivers so that the cabinet can be operated horizontally. Quite ingenious.
"The strength is in the mids and upper mids. Voices, violins, winds, were all nuanced and distinct, and even massed brass sections didn't lose transparency."
Recording Magazine

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Subwoofers

KRK powered subwoofers are the perfect choice when you need to hear what is happening in the depths of your mix. In a stereo configuration, the subwoofer will have to produce the bass normally generated by the monitors – that alone can exceed the headroom of an ordinary sub. In a surround sound configuration, the subwoofer has to reproduce all of the low-frequency information from five or more channels as well as the demanding bass content of the LFE channel. These challenging applications can place demands far exceeding the capabilities of normal low-frequency drivers and power amplifiers. This is where the performance of KRK family of subwoofers shines.

"I've always loved having a sub to wow record companies or artists when playing back a song or mix. The truth is, most subs are only good for that purpose and are not accurate enough to work with when making a record. The KRK12s changed that. It's very accurate and actually makes my Exposés sound even better!"

Martin Harrington –
Writer and Producer (Celine Dion, Kylie Minogue, Natalie Imbruglia)

VXT Monitors

Whether you are making critical mixing decisions or need to capture the stable nuances of a unique sound, you will quickly discover that the VXT Series is as precise about your work as you are. The VXT Series feature key design elements that continue to make the KRK sound a studio standard. The VXT Series have been designed to present the true nature of the audio material without colouration or enhancement.

"I just love the overall sound. They're clear, reliable, transparent, and consistent. I like to listen really loud and I love how the VXT8s are able to respond to the challenge. No matter where I am, I know exactly how my mix is going to sound when I get to work with the black and yellow!"

Henri 'MGI' Lanz, Producer/Songwriter (Akon, Sean Kingston, Timbaland, Pitbull, Justin Bieber)

At KRK, our focus is to develop studio solutions to help you create a great mix. KRK monitors and subwoofers are legendary. The ERGO room analysis and correction system is revolutionary. The KNS Headphone series is designed to provide what KRK has been delivering for 25 years: sonic accuracy, transparency, and consistency. The signature yellow woofer of a KRK monitor tells the world that you and your monitor are true to the mix and true to your craft. KRK studio monitors enable you to confidently make the critical decisions that impact the music and audio program. Visit us at www.krksys.com to find out why our focus is your mix!

Exposé E8B

Utilising state-of-the-art components to achieve a level of clarity and sonic accuracy that is unprecedented, the new Expose E8B is the flagship of KRK's product line. With its stunning, highly functional enclosure featuring thick, non-parallel, internal walls that eliminate standing waves, and magnetic shielding for use in close proximity to video monitors, the Expose E8B elevates KRK's reputation as a manufacturer of premium studio reference monitors to an entirely new level.

ERGO

A new software and firmware update is now available for KRK's leading ERGO® Room Correction System. ERGO is an audio recording interface and room correction system designed to measure and analyse phase and frequency problems within a listening environment. To correct room issues, the internal digital signal processor analyses and corrects room problems, improving the response at the listening position, which results in mixes that translate far better to other playback systems. This latest version includes support for Apple® Mac OSX Lion 10.7.3 and Microsoft Windows® 7 SPI (32-/64-bit), and also improves the capabilities of ERGO, such as installation, calibration and configuration.

KRK® SYSTEMS

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1-800-4 GIBSON
e service@krksys.com
w www.krksys.com

Finally… professional studio monitoring systems designed to perform just like the pair you rely on most – your ears.

About Chris Pelonis

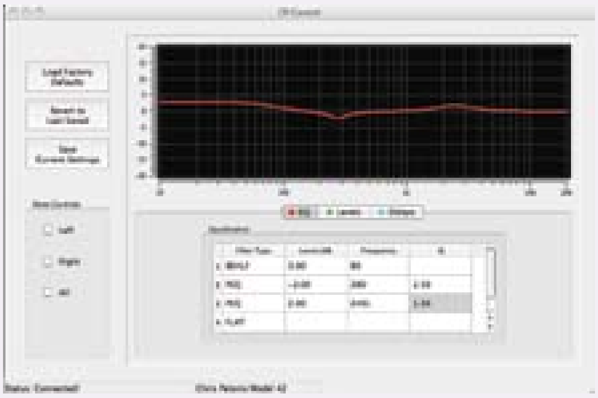
In addition to being an excellent mix engineer and extremely talented musician (he recently spent most of 2011 on tour with Jeff Bridges as his guitar player and Musical Director), Chris Pelonis is regarded as one of the industry's most prestigious room designers, having built studios and performance facilities all over the world. Now, he brings all of that talent and knowledge to his Signature line of professional studio monitors, incorporating components and designs that he's been using for years in his own facilities, and delivering surgically accurate, amazingly musical sonic performance.

The Model 42

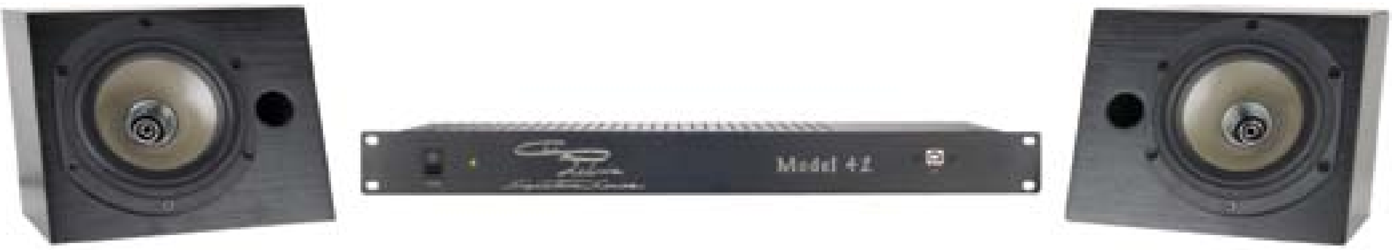
Designed from the ground up to reflect the exacting performance standards associated with the Pelonis name, the Model 42 delivers incredibly accurate detail and imaging along with an amazingly musical sonic signature at a price point accessible to engineers, producers, and music lovers at all levels.

The ported cabinets feature a striking, innovative rhomboid shape that allows for effortless comprehensive placement, as the inward angle of the front face ensures that the drivers are aimed correctly – they can even be angled up or down! The state of the art concentric multi-fibre woofer encircling a titanium dome tweeter assures the most accurate time domain response of any design, providing a frequency response of 75 Hz-35kHz (±3dB). The bi-amplified system is powered by four 100w amplifiers specifically designed for the Model 42, which are housed in an external module along with audiophile grade active cascading crossovers.

For those who want to be able to fine-tune the system to their individual environments, free software that allows extremely precise editing of EQ, volume, and delay is provided. Connected from any computer via the USB port on the front panel of the electronics module, CP Control software allows complete control over every aspect of the unit's performance, and any changes can be stored in the module after editing.



CP Control software allows you to meticulously tweak your Pelonis system via USB for maximum performance in any listening environment.



The Model 42

The Model 42 LF

The Model 42 LF

The Pelonis Model 42LF Low Frequency Extension System is not referred to as a subwoofer because it does not work the same as a conventional subwoofer.

Most subwoofers intended for professional audio applications are designed to be shelved at a certain low frequency (typically around 80Hz), and then run with a pair of satellites usually cut off with a hard high pass filter at the same frequency. This transfer of energy is inefficient, and can lead to problems depending on the settings (and construction!) of the sub and satellites. Many are equipped with inexpensive, inaccurate volume and crossover controls, and frequently are only fed with a mono and/or dedicated LFE signal. They cannot be switched on and off without changing the point at which the satellites are shelved.

The Model 42LF is intended solely to integrate perfectly with the Model 42 studio monitoring system. This is accomplished by feeding both systems with a full range stereo signal, ensuring precise reproduction. The compact, full range Model 42's coaxial drivers gradually lose energy around 65Hz, while the 42LF's bass enclosure begins to gain energy around 85Hz. This overlap between 65 and 85Hz allows the units to transfer energy seamlessly, providing the most natural and accurate low-end extension of any professional playback system.

Another benefit of this method of operation is that the Model 42LF can be switched on and off at any time, without disturbing the frequency response or playback capabilities of the Model 42 system. Also, most subwoofers use off the shelf drivers and electronics. The Model 42's eight-inch woofer, 200W amp, and ported enclosure were all built to meet world-renowned acoustic designer Chris Pelonis' exacting specifications.

The Model 42LF couldn't be easier to set up. Just feed its electronics module with the same full range stereo signal as the Model 42 system, run a single speaker cable to the bass enclosure, and the low end of your system will extend flawlessly down, without any issues with the proper volume or crossover settings.

The Model 4288

The Model 4288 is a spectacular sounding three-way monitoring system at an amazing price point.

Based on the components of the highly successful Pelonis Model 42 system and its companion Model 42LF subwoofer, the robust MDF enclosure houses a four-inch dual concentric Tannoy driver handling the mid and high frequencies up to 35kHz and a custom designed eight-inch woofer providing deep, accurate bass response. The system is driven by 400W of combined power in an outboard electronics package that also incorporates custom designed active cascading crossovers, keeping the sensitive electronics away from the magnetised vibrating components, and avoiding the noise that can come from having audio and power cables running to the enclosure.

As with the other Pelonis models, the free CP Control software allows for the Model 4288 to be fine tuned via USB for optimum performance in any environment.

The Model 4288

With over a quarter century of experience and a list of high profile clients a mile long, Pelonis Sound & Acoustics is a full service company dedicated to excellence in the field of studio design and consultation, acoustic analysis and measurement, construction and installation solutions for recording studios, multimedia production facilities, performance venues, places of worship, and theatres.

Pelonis Sound & Acoustics
w www.chrispelonisspeakers.com

Distributed worldwide by Wave Distribution
w www.wavedistribution.com

Precision Studio Monitors Made in Switzerland

Full PSI Audio monitors range:
A14-M, A17-M, A21-M, A25-M and the sub A225-M.

The philosophy of PSI Audio can be compared to Swiss watch designers. Our vision is to be globally recognised as pioneers in precision audio combining innovation, creativity, and technology.

Quality – Technology – Experience – Coherency

Designed and manufactured at our Yverdon workshops in Switzerland, the latest generation of PSI Audio speakers is the culmination of 30 years' knowledge of materials and treatments, guided by a thorough understanding of acoustics.

The unique precision of PSI Audio monitors is a delicate mix between the passion, experience, and know-how of electro-acoustic technology.

The whole product range takes advantage of our knowledge, and we strive to deliver the most coherent sound and design between all our models. In order to get the best compatibility between models, the transfer function should be the same. This implies not only a similar frequency response, but also an identical phase response, which is our speciality.

At the core of our speaker performance is an electronic design based on two exclusive concepts – CPR and AOI. This technology enables us to show people that PSI Audio is more than a black box.

CPR

The CPR system consists of multiple all-pass filters, each of which act in a specific frequency range in order to obtain a wide area of Compensated Phase Response generating a constant group delay.

Thanks to the CPR system the position of the sound image is highly accurate. This technology allows the design of surround sound systems, with different types of PSI Audio speakers, to maintain an accurate phase response.

Practical Advantage of CPR and Impact on Stereo Applications

The ear is very sensitive to group delays or phase irregularities of sound. The human brain detects such irregularities easily and processes them into space related information such as positioning a sound source.

All traditionally designed speaker systems suffer to a certain degree of such irregularities.

These irregularities are the reason why some speakers produce a wider and deeper room perception that determines the reproduction of the sound image.

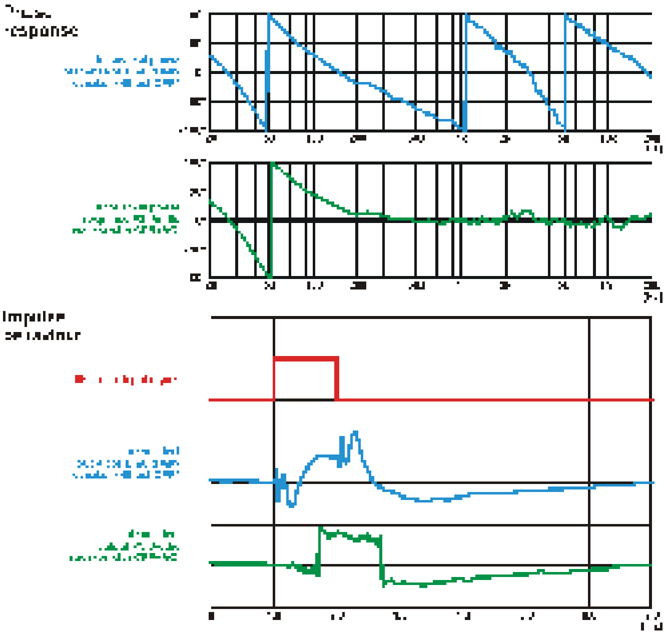
The speaker system represents the reference tool of every sound engineer. An accurate transient response particularly helps during the fine-tuning of reverb effects, or the design of a specific sound and its position in the sound image.

As a sound recording passes through various processes (recording, mixing, and mastering) in which various people, locations, and therefore speaker systems will be involved, corrections may be applied due to phase irregularities that are not present on the original recording.

PSI Audio speakers feature our unique CPR system that generates a Compensated Phase Response, removing such irregularities, generating a stereo image and projected room of extreme accuracy. PSI Audio speakers provide a more accurate tool, a true reference to the sound engineer.

CPR Impact on Surround Sound Applications

Traditional speaker designs have different phase responses, and therefore the phase inaccuracy phenomenon is worse in surround sound applications, where room information and positioning have an even higher priority and a more critical part of the sound engineering



An impressive impulse behavior due to the combined technologies of AOI and CPR.

process. This is one of the reasons why speaker manufacturers strongly recommend using speakers of the same type when creating a surround sound system.

The CPR system by PSI Audio features an extremely accurate and superior surround sound image and a much improved working environment. A unique advantage provided by CPR enables a user to mix for the first time between different types of PSI Audio speakers in a surround sound system, whilst maintaining perfectly accurate phase response. Not only will the PSI Audio surround system sound much more accurate and therefore provide a superior working tool, but it can also introduce significant cost and space savings when investing in a new monitoring system.

AOI

The AOI system detects the movement of the membrane, and the moving coil so processes them using counter reaction filtering. The damping rate is continuously adjusted in different frequency bands to match the position of membrane and coil.

The AOI system allows the reproduction of sound without transducer colouring over the whole frequency range.

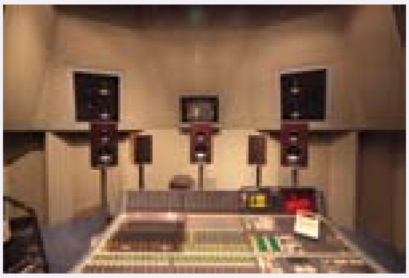
Practical Advantage

PSI Audio speakers featuring the AOI system have a superior impulse behaviour to traditional amplifier designs. Whilst the transducer travels to its intended position, the AOI circuitry seamlessly adapts the amplifiers' output impedance to ensure ideal acceleration of the membrane to reproduce the desired impulse. Once the transducer reaches the end of the impulse, the AOI circuitry provides a break in order to act against any overshooting of the transducer. The AOI circuitry is almost capable of reproducing a square wave, and therefore increases accuracy by marrying the transducer and the amplifier into a perfect couple. From our experience, a nice side effect of the AOI system is that the membranes of a PSI speaker do not produce parasitic sounds when other speaker systems in the room are in use. When air pressure changes due to other sound sources, the AOI will detect this and tighten the damping of its transducers in order not to produce parasitic sounds (sounds not present at the input).

In current times where much more importance is given to the low end reproduction of sounds, especially when using sub woofer technology in surround sound systems, the importance of a monitoring system that has an accurate and not flattering reproduction becomes essential. The result of AOI gives PSI Audio speakers a highly accurate impulse behaviour with a minimum of transducer colouration.

Please visit our website www.psiaudio.com for more information, detailed graphs and specifications.

For these technical innovations and sound precision reasons, more and more producers worldwide are choosing PSI Audio as their reference monitors. We hope that this encourages you to listen to our products and choose them!



New Reference: IRCAM in France

It is a big honour for PSI Audio to announce that IRCAM in Paris selected the A25-M and A225-M for their reference 5.1 studio. We thank Mr. Christophe Egea and his team for their warm welcome and instructive visit in one of the world's leading edge research institutes for acoustic, audio, and music research.

Christophe Egea explained to us that "the selection was a long process where many brands where short selected, then short listed. Users at IRCAM went through a battery of listening tests where a couple of objective and subjective elements were needed to meet the highest requirements.

PSI Audio was selected and we were really amazed by the great precision in space reproduction, which is really important for us. The quickness of the monitors is quite impressive. The ability to reproduce details with the highest possible precision was another important factor. Everybody liked the PSIs".

PSI Audio R&B 8A: Simply for work, with our new Router and Bass management

The new Router & Bass management is integrated into our subwoofer. It is made to provide PSI Audio users maximum comfort during working sessions.

This product enables you to use the full potential of the unique compatibility and coherence of the PSI Audio line.

Advantages Summary:

- Easy switching between three monitoring systems
- Use of one multi-channel speakers system in multi-channel, satellite+sub, or stereo modes
- Subwoofer usable as bass extension or LFE
- Standby/Mute and switching modes controlled by a simple footswitch
- Standby control for the unused PSI Audio speakers

For more information visit:
www.psiaudio.com/product/accessories/router-bass-management-rb-8a

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sE Munro

Egg 150 Monitoring System

Andy Munro reflects on the success of the Egg 150 launched at the end of 2011: “After several months of auditions and reviews, I cannot recall a single negative comment about the balance and accuracy of the sound these speakers make.”

The sE Munro Egg is not a speaker but a monitor system that incorporates a fundamental rethink of the loudspeaker engineering process. sE Munro suggests that the traditional ‘wooden box’ has been replaced by a scientifically proven, curved enclosure that virtually eliminates diffraction and resonant effects that distort and smear the original sound.

The sE Munro Egg 150 is the world’s first ‘Active Integrated Monitoring System’ (AIMS) – combining state of the art modelling technology to produce the perfect speaker chassis, with a fully integrated, custom built amplification system unique to the Egg speakers. Neither component may be matched to other speakers or amps as they are designed specifically to work in perfect balance with each other.

The requirement to preserve the integrity of the speaker enclosure presented a number of key advantages in terms of flexibility and control, which the more traditional ‘amp in the box’ active monitors lack. Fine tuning of EQ from the amp means users do not have to climb behind the monitors to make room related changes – engineers can stay in the ‘sweet spot’ and adjust. Two pairs of inputs are provided with A/B switching between mix and playback sources as well as a Master Volume. This allows the user to listen via a CD player, iPod, etc, direct into the Aux Inputs without having to route through a mixer, and therefore not having to boot up a studio just to listen to material. This feature also allows for mastered and unmastered material to be A/B’d, level matched, so that changes in the source material due to the mastering process can be easily heard.

By using high quality linear power supplies the Egg 150 maintains maximum transient power up to double the rated value. Bi-amplification further enhances the power headroom and results in the lowest possible distortion values. By using 35V power rails the Egg 150 is capable of high transient sound levels from a relatively modest amplifier compliment and the power output devices are fully impedance matched to the speakers.

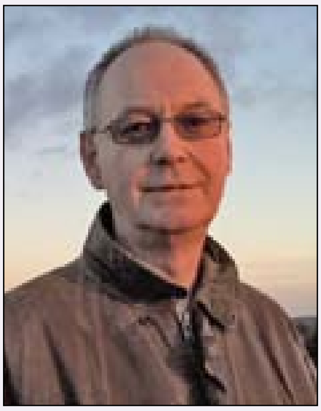
LED indicators monitor and indicate when to stop turning up the volume and LED locator guide beams guide the user to the precise ‘sweet spot’. The science behind the Egg speakers was explained in last year’s *Audio Media* monitor guide. Today, the sE Munro Egg 150 Monitoring System is a reality.

The Egg 150 has redefined what people can expect from a near-field monitor system. The clarity and definition is disconcerting, so much so that even after several months of auditions and reviews I cannot recall a single negative comment about the balance and accuracy of the sound these speakers make.

The science of the design, from the basic materials to the acoustically neutral radiation pattern, has proved itself in many critical listening tests and the elegant simplicity of the tilting stand and light beam focusing system has shown its usefulness in defining the optimum mix position.

The separate control unit with its high-grade analogue circuitry easily surpasses the overhyped and underperforming digital amplifiers so common in active monitors. The Egg 150 maintains superb bass control by placing matched and balanced power amps with a conservatively rated power supply. The absence of standing waves inside the cabinet and the absence of discontinuities outside the cabinet ensure that every note radiated is clean and precise.

This is a truly revealing system and that makes it perfect for mixing, mastering, and tracking. Listen and you will be convinced. In an audio world of digital number crunching, software emulation and dynamic range strangulation, the Egg 150 Monitoring System is a breath of fresh air (and ear). Listen and you will be genuinely surprised.



Andy Munro, Munro Acoustics

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MUNRO ACOUSTICS sE ELECTRONICS

The Truth, The Whole Truth… Hear For Yourself

Sonodyne is quickly gaining a reputation for unrivalled performance, offering exceptional detail, imaging, and transparency. You owe it to your music to check them out.

Sonodyne-SM-Series

Sonodyne has been designing and manufacturing pro audio products since the late 80s from its manufacturing bases in Mumbai and Kolkata. Its highly skilled and experienced team of designers has produced a number of well respected speakers, that have up until now only been available in India.

The first products to be launched outside of India are the Sonodyne SM range of true reference studio monitors. By utilising a combination of solid aluminium die cast enclosures (SM50AK & SM100AK), high quality transducers and customised high power amplification, the Sonodyne SM series delivers exceptional performance at great value.

The Sonodyne SM Series of monitors has already been chosen by many top producers and engineers for their unrivalled detail, imaging, and transparency. This ultimately gives a Sonodyne user the ability to make quicker and more informed tracking and mixing decisions.

Sonodyne SM50AK Nearfield Monitors

The Sonodyne SM50AK is a die-cast aluminium, two-way near-field active monitor, with a magnetically shielded 5.25-inch Kevlar cone woofer and 26mm silk dome ferrofluid cooled tweeter with integral waveguide.

The SM50AK is ideal for desktop editing and serious audio monitoring. It provides a well articulated yet full bodied response from its compact enclosure. The highs are open, the mids well resolved, and the bass detailed and tight. Magnetically shielded, it may be placed beside video monitors.

The SM50AK can be used with the SLF210 Sub Woofer for 2.1 and 5.1 applications.

Sonodyne SM100AK Nearfield Monitors

The award winning Sonodyne SM100AK is a die-cast aluminium, two-way near-field active monitor, with a magnetically shielded 6.5-inch Kevlar cone woofer and 26mm silk dome ferrofluid cooled tweeter with integral waveguide. It features an extended LF response compared to its smaller sibling, the SM50AK, and also offers a wider sweet-spot. This, in conjunction with a higher SPL, readies it for the more demanding applications such as multi-channel audio monitoring in larger rooms.

The SM100AK is already becoming a firm favourite with many engineers, writers, land producers who all claim that it offers unrivalled detail and imaging, and also prefer the tonal quality and 'musicality' of these rock-solid speakers.

Sonodyne SM100AK

The Sonodyne SM100AK is perfect for recording, mixing, post-production, and broadcast, and can be used with the SLF210 V2 Subwoofer for 2.1 and 5.1 applications.

Sonodyne SM200AK Near-Midfield Monitors

The SM200AK is a two-way studio reference monitor with exceptional frequency bandwidth and sound pressure level, making it an ideal solution for broadcast, post-production, and professional studios.

The SM200AK enclosure combines the best of two cabinet worlds: MDF and aluminium. The sturdy aluminium die cast baffle ensures that the 8-inch Kevlar LF and the 1-inch metal dome HF are firmly mounted and vibration is minimised. Additionally the curved edges of this solid baffle minimise diffraction. The baffle also features an integral waveguide for the HF, resulting in precise imaging and exceptional on and off axis response.

The inbuilt low distortion amplifier module continuously provides 150 watt to the LF, and 100 watt to the HF, and feature room compensating bass and treble tilts useful in difficult acoustical environments.

Sonodyne SM300 Midfield and Main Monitors

With serious project studios and smaller pro studios, there is often a need for a compact speaker that can deliver detailed sound at high db levels and over an extended frequency bandwidth. It is with this in mind that Sonodyne has introduced the new SM300, which features a number of innovations that overcome most of the challenges in such a complex design process including:

+ SONODYNE++++ SONODYNE++++ SONODYNE++++ SONODYNE++++ SONODYNE++++ SONODYNE++++

Sonodyne SM300

What the reviewers say:

"Despite the crowding in the market for small active monitors, Sonodyne has something loud to say. Having had the pleasure of listening for a month or so I've grown to love the SM100AK." … "They hold their definition even when playing loud, and if sometimes I suspect a little thickening somewhere in the upper mid, it's blown out by the insight they deliver into the programme material" … "If you are looking for a small active monitor, you should hear these."
Alistair McGhee, Audio Media

"Whether mixing, playing, or recording, they hit the spot every time." … "Their superb precision tells you right away if you've picked the wrong mic or the wrong EQ." … "Workflow is king and anything that helps you move things along a bit faster is worth its weight in gold, or at least hard cash. These speakers come highly recommended."
Stuart Bruce, Future Music

- Aluminium extruded sides provide a rigid build; curved edges help minimise standing waves
- Double MDF front, top, bottom resulting in a compact, rigid enclosure that minimises extraneous noises
- Aluminium die cast waveguide for HF and MF drivers to achieve controlled dispersion without affecting linearity
- Three class AB amplifiers rated at LF: 150, MF: 75, HF: 75 Watts for high SPL at very low distortion, DSP controlled fourth order crossover and equaliser for flat frequency response
- Eight-inch high excursion Kevlar woofer with 4-inch Kevlar cone midrange, and 1-inch silk dome tweeter provides a detailed response from 35 Hz ~ 27 kHz
- DSP controlled (three) EQs, and (two) bass roll-offs to aid in room compensation

Sonodyne SLF Series Subwoofers

The new SLF312 and SLF210 V2 add some exciting new features to the proven workhorse subwoofer, the SLF210, which include:

- 2.1 Channel bass management
- Discrete phase control from 0 ~180°
- Polarity switch
- Ground lift switch
- The kicker-external (foot-switch) controlled bass management.

The SLF210 V2 features a 10-inch subwoofer transducer powered by a Sonodyne Class D 200 Watt amp, and can be used with the SM50AK and SM100AK for 2.1 and 5.1 applications.

The SLF312 features a 12-inch subwoofer transducer powered by a Sonodyne Class D 300 Watt amp, and can be used with the SM200AK and the new SM300 for 2.1 and 5.1 applications.

What the producers say:

"..With tight bass, flat mids and extended highs this is the new reference"
Josh Blair, Engineer/Producer (Duran Duran, Beyoncé, Take That, Stereophonics, Melanie C, Leona Lewis & many more…)

"Because I trust these speakers, I can make mix decisions with confidence."
Mark "Tufty" Evans, Producer (Imelda May, Beverly Knight, Elton John and many more...)

"We did tests with a lot of different speakers and we found Sonodyne to have a very natural response. We have been really impressed."
Robin Reumers, SAE Manager, Brussels

"As we were looking for new near-field monitors, we tried quite a few. Then along came the SM100AK and wow! Such detail and smoothness, and in our opinion, out-performing some of the far more expensive competitors. So it was a no brainer ... yes, please!" *Francesco Cameli, Sphere Studios*

Josh Blair – Engineer/Producer

Auro 3D System – SAE Brussels

"I am amazed at the detail that the Sonodyne SM 50AKs give me. I really can trust them. And they sound so full and smooth for such a compact monitor."
James Saunders, Jungle Group, London.

Jungle Studios.

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A New Twist in Monitor Design

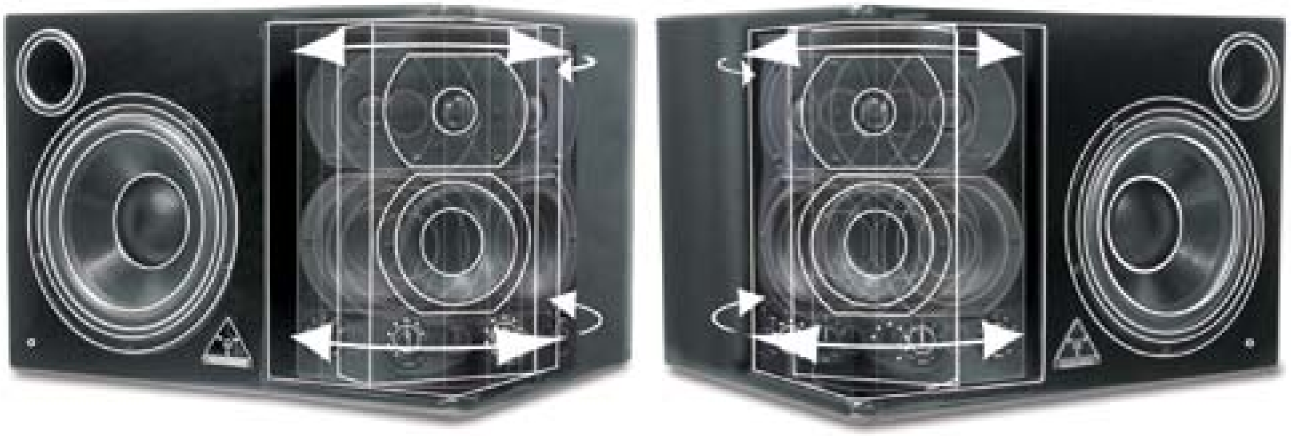
Trident's new Active Stereo Close Field Monitoring System, developed in conjunction with Harvey Gerst, places the sweet spot right at your preferred listening position.

Trident Audio Developments, a longtime industry standard, introduces a new way to critically monitor in the studio. Marking their initial step into the studio monitor market, the Trident Audio HG3 active monitors are designed to provide a listening experience that is unparalleled. By virtue of the integrated, rotatable, high and mid-range cabinet, flanked by outer subwoofers, the HG3s allow for an ease of listening, focus, and utility – all of which are ultimately crucial to the audio recording, mixing, and mastering environment.

The HG3 monitors are unusual speakers. They look unconventional. And compelling. The whole notion of why they are this way is because of the unconventional and compelling designer, Harvey Gerst – who put the 'HG' in the HG3's. Harvey put a lot of thought into the concept of these monitors over the years based on a life spent in the audio industry as a musician playing gigs in a spectacular era, and as a designer for JBL. Most importantly, Harvey is a recording engineer known for making bands sound really good.

The beauty of these speakers centres around the mid-range. It is a four-inch woofer tasked with reproducing frequencies between 320Hz up to 3500Hz. There is a lot of information in that range for the human ear and, therefore, the human voice. Coincidental or not, this is near the Voice Frequency, or 'VF' range in telephony, which is 300Hz to 3400Hz. At the extents: the vertically oriented high range tweeters in close proximity to the mid-range – and the subwoofers, which fire from the outside of the independently rotating inner cabinets, provide at turns, a broad soundstage stereo image – almost soffit-like, to a surgical, focused field, rendering a sense of unimpeded detail. When listening intently to audio, one will adjust their own proximity to the sound source to better hear. With the HG3 monitors, the listener has the unique ability to simply reach out and adjust the relative position of the audio source.
The impact of this is not fully realised until, having used HG3s continuously, a person sits in front of a fixed monitor configuration and fights the urge to reach out and adjust the speaker

Since Trident Audio Developments' founding in 1971 by Professor Malcolm Toft, it has been committed to the design and manufacture of the highest quality professional audio equipment for studio use. Trident steadfastly holds to Toft's original core philosophy, "We are recording engineers making gear for recording engineers, using our ears, instead of meters, to fine tune every sonic aspect". Indeed, the aural signature of Trident Audio consoles has been at the cornerstone of modern recording for over 40 years and can be heard on recordings by renowned artists across the entire spectrum of music.



The unique cabinet configuration of the Trident HG3 Close Field Monitoring System is designed to reduce or eliminate many issues found in today's monitor systems. Some of these include:

- Limited Dispersion and Bandwidth
- Doppler Distortion
- Phase Distortion
- Inter-Modulation Distortion
- Cabinet Resonances
- Edge Diffraction and other problems associated with traditional monitor designs.

Features

- The HG3's unique design addresses issues of stereo imaging and off-axis response by virtue of the high and mid frequency cylinder, which rotates independently from the main subwoofer cabinet.
- Dual voice coil sub woofers (with over ½-inch of linear cone travel). Smooth response extends below 35 Hz.
- The sub woofer has two 100 Watt MOS amplifiers in parallel to ensure clean, distortion free power. The port is located outside the path of all active speaker components to allow freedom from Doppler distortion at very low frequencies.
- Below 90 Hz, the HG3 bass response is essentially omnidirectional. From 90 Hz up to the crossover point of 320 Hz, the bass response narrows to about 180 degrees.
- The Trident HG3 system eliminates uncontrolled woofer movement and port noise by using a controlled electronic roll-off below the speaker's usable response.
- Crossover points are set at 320 Hz and 3,500 Hz to eliminate mid-range modulation due to pumping bass and refraction due to interference from low end components of the source material.
- The mid-range speaker and tweeter are mounted in an isolated, six-inch diameter, damped, inert cylinder, to eliminate edge diffraction and woofer interaction. The cylinder also houses the crossover, plus the adjustable mid/high level controls. A separate 80 Watt amplifier drives the cylinder mid and treble components.
- The unique cylinder design allows the listener to position the critical directional components as desired, regardless of the distance between cabinets – without the need to move the main cabinet precariously.
- The Trident HG3 power amplifier section is made up of three identical MOS amplifier modules, noted for their low distortion, wide bandwidth, and low noise levels. A unique "muting circuit" prevents thumps at turn on/off. Two modules are used to power the woofer section, and the separate third power module is used for the mids and highs. Overall distortion is typically around 0.05 % and the noise level is typically below -104 dB.
- A warning LED is built into the front panel of the Trident HG3 that changes from green to red as the signal level approaches audible distortion levels.
- High gloss "piano black" finish accentuates the unique cabinet design.

angle. This is akin to a long-time smartphone user, when attempting to navigate an older style phone, initially pokes at the unresponsive screen with their index finger.

In any fixed cabinet design, there are inherent issues that affect sound and performance. Gerst, in considering these over time, found various ways to address non-linearities such as edge diffraction, doppler (phase modulation) distortion effects, and inter-modulation distortion. For example, rotating the cylinder away from the face of the main cabinet drastically reduces edge-diffraction effects – while placing the subwoofers to the outside of the soundfield considerably reduces modulation of the higher frequencies due to subwoofer excursion. The minimisation of these issues produces startling results – all of which has served to earn the backing of some of the biggest and most legendary names in the recording industry, including Ed Cherney, Al Schmitt, and George Augsberger.

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Rock & Boulder, 'Brutally Honest' Monitoring

Bespoke Class A/B amps from the amp guru Tim de Paravcini. Sealed cabinet for fast, honest bass reproduction. Superior 50kHz folded ribbon tweeter for smooth detailed high frequencies.

The Rock: Key Features

- 2-way active monitor
- Bespoke true class A/B 100 watt E.A.R. discrete amplifier
- Closed cabinet design
- Corian front baffle
- 50kHz folded ribbon tweeter
- 7-inch/180mm woofer
- Balanced XLR input
- Un-balanced RCA gold plated phono input
- SPL Max @ 1M = 105dB
- Frequency response = +/- 3dB 50Hz- 35kHz
- Frequency response = +/- 0.5dB 70Hz- 30kHz
- Baltic Birch 9-ply cabinet
- 11.2kg each
- 290mm deep x 220mm wide x 325mm high
- Brutally honest

Years in the Making?

We decided to design and manufacture our own range of professional monitors from scratch to overcome the shortcomings found in most commercially available monitor systems and that will deliver what true professionals expect. A brutally honest tool on which you can base the most critical decisions without a second guess or hesitation.

This has been achieved by assembling a team of professionals with impeccable credentials in the areas required to produce a new standard of monitoring.

I wanted to produce something different, using new materials and designs, and so I approached studio designer and acoustician Kevin Van Green to develop the Birch Plywood cabinet and Corian front baffle; while the amplifier, rather than an off the shelf approach, is a bespoke discrete Class A/B design from one of the best designers in the business, Tim Di Paravicini, whose company Esoteric Audio Research produces some of the finest amplifiers around. After testing many woofers we selected reputable German manufacturer ELAC for its quality and consistency – for The Rock a 50kHz ribbon HF and 6.5-inch woofer are used.

We wanted to produce a brutally honest monitor and we've certainly done that, our measurements indicate this. The cabinet is sealed and it has no port, which is unusual for studio monitors, but the difference in bass accuracy is incredible. It also has very good low-end extension too. From the start we decided not have any EQ controls – the sound is what you get. If you can't deal with the accuracy The Rock produces, then it's not for you, simple. We've consulted with many producers and engineers and they welcome such a monitor."

– *Kevin Walker, MD, Unity Audio*

Unity Audio The Rock.

Unity Audio Ltd was formed in 1995 by Managing Director Kevin Walker with many years experience in the pro audio business prior to the creation of Unity Audio, advising professional recording artists, engineers, producers, and studios alike on selecting equipment for specific applications as well as incorporating studio design, build, and installation.

Unity Audio over the years has become intrinsically linked with distributing studio monitors, and so we have gained a vast range of knowledge in this area. In 2009 it became apparent that it was time for us to design and manufacturer our own brand of monitors, starting with the critically acclaimed 'The Rock'. We pride ourselves in taking a different approach to designing and producing products, using different materials in innovative ways, sourcing quality components from reputable companies, working with skilled craftsman, incorporating new ideas on traditional designs, and working with professionals in order to fine tune our products before launch.

It doesn't stop at The Rock. We felt that so-called professional speaker stands just weren't up to scratch, and so we now offer a custom range of stands called 'The Monolith'. We also now offer bespoke acoustic treatment panels in the form of the Bass-O-Nator. These solve troublesome lower frequency issue for both studio and domestic use with incorporated mid/hf absorbing qualities too.

The Boulder: Three-Way Active Monitor with Coaxial Mid-Range Tweeter

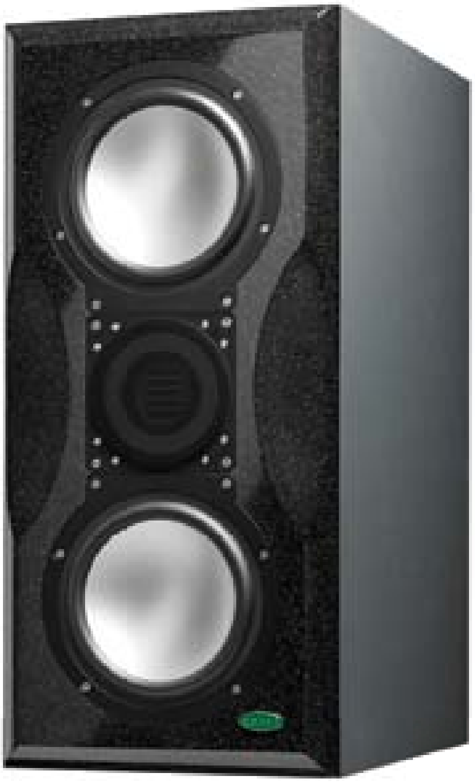
The next active professional monitor following on from the The Rock is the new Boulder. This shares some of the same interesting materials and designs, such as a Baltic Birch plywood cabinet – but this time 18mm instead of 12mm, as used in The Rock. A Corian front baffle is used, again like The Rock, and bonded to an internal wooden baffle, but the Boulder uses a huge 30mm slab of Corian instead of The Rock's 12mm along with large radius edges to reduce reflection. Like The Rock, this new model will boost true fidelity, with a fast, accurate, and detailed sound; but with extended bass response, even more detailed mid-range, and higher SPLs for larger rooms.

Bass Driver

Two 180mm (7-inch) woofers are used, the same woofer model as in The Rock. This will increase low frequency extension and achieve higher SPLs. Each woofer has a 0.2mm aluminium foil chemically bonded to a rigid pulp fibre cone. This reduces harmonic anomalies and permits +/- 15mm of woofer travel producing accurate low bass frequencies. The use of aluminium bound to a pulp fibre cone ensures that the woofer cone will remain symmetrical at all frequencies, producing a long life for the woofer element and full accuracy of the driver through its life: something few other materials can claim.

Coaxial 5-inch Mid Range & Folded Ribbon Tweeter

A new dual coaxial Mid-range Tweeter is employed, another unique feature of The Boulder. This new unit is a unique combination of a flat aluminium honeycomb mid-range ring radiator and a concentrically arranged folded ribbon tweeter. This design realises the vision of an acoustic point source! This facilitates an optimised acoustic power response, and results in a homogeneous and very wide sound dispersion angle providing for a new kind of relaxed but very precise reproduction.



Unity Audio The Boulder.

Don’t take our word for it, listen to these guys!

“I really like these monitors, I can’t stop going to them! They’re not flattering at all, so they make you work hard to achieve the results, but that’s how a true studio monitor should be. The Rocks do exactly what Unity Audio claims, they are ‘Brutally Honest!”

Alan Moulder -Producer My Bloody Valentine, Depeche Mode, The Jesus and Mary Chain, Wolfmother, Foo Fighters, Death Cab for Cutie, Them Crooked Vultures, Nine Inch Nails, The Killers, Interpol, The Smashing Pumpkins, Redhead and Yeah Yeah Yeahs.

“The client and myself both agree that my 30-min tweak on the Unity Boulders is a better mix than the last few tracks that I mixed for him that took two days and cost him $2000. Your monitors are world class, there is nothing close to the flatness and exact representation of a true mix that your monitors can provide on the market that I have ever heard”.

Owner-Cavern Sound Studios Australia

“The Rocks are amazing, they sound a lot bigger than the are and have incredible low end detail and punch even at very low levels.”

Andy Gray-Composer/Producer –
Tori Amos, Liz Fraser, Gary Numan, Korn, U2, Enter Shikari, Hard Fi

“I wasn’t even in the market for a pair of monitors until I heard The Rocks. The soundstage on them is huge though unhyped and true. I used to spend hours agonizing over the low end.”

Mike Crossey-Producer. Arctic Monkeys, Razorlight, Foals, The Kooks, Black Keys

“The Rocks are amazing, brutally revealing, which is exactly what I need for demanding mixing”.

Ben Hillier – Producer. Blur, Depeche Mode, Future Heads and Elbow

“Crucially the bottom end is detailed and true at any monitoring level. Honesty is the best policy!”

Ken & Jolyon Thomas –
Engineer/Producers Moby, Sigur Ros

“I don’t usually use near-fields, in 27 years I’ve not found one that I’m comfortable with for long periods of time, until I auditioned The Rocks. They complement our existing main monitors beautifully: they’re detailed, have outstanding bass, excellent stereo imaging, are pleasant to listen to and sound good. How detailed are they? Detailed enough to hear differences in word clock sources!”

Miles Showell –
Metropolis Mastering Studios

The Boulder: Key Features

- 3-way active monitor
- 4 x bespoke true class A/B 100 watt E.A.R. discrete amplifiers, one per driver
- Closed cabinet design
- 30mm Corian front baffle
- Coaxial 5-inch mid-range and 50kHz folded ribbon tweeter
- 2 x 180mm (7-inch) woofers
- 368mm deep x 256 mm wide x 549mm high
- 23kg each
- Balanced XLR input
- 18mm grey Baltic birch 9-ply plywood cabinet
- Brutally honest
- HF EQ Shelf @ 10kHz +/- 2.5dB
- Mid Cut/Boost +/- 2.5dB

Unity Audio Ltd.
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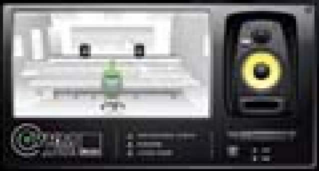
VRM
VIRTUAL REFERENCE MONITORING
BOX
Focusrite

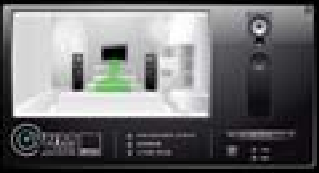
Hear your mix, through 15 different speakers, in different environments

Professional Studio



. . .just using headphones.

Living Room

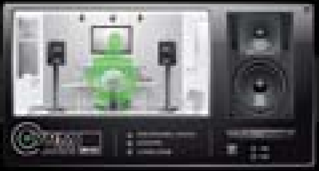


**VRM Box™ is a compact mix monitoring solution worthy of your studio headphones.
With patent-pending VRM technology from Focusrite, now you can mix anywhere, anytime.**

Mix in the middle of the night without waking the neighbors. Mix as you travel from the gig to the studio. Mix from the sweet-spot in acoustically perfect environments. Jump from room to room, switching from speaker to speaker, without ever burning a CD or leaving your seat.

Now you really can mix on headphones.

Bedroom



Headphone output quality beyond interfaces five times its price

www.focusrite.com/VRM_Box

Need a recording interface? Check out the Saffire PRO 24 DSP, featuring VRM.

Focusrite®
SOUND IS EVERYTHING

Headphone Buyer's Guide

Who knew there was so much to know? Here, *Audio Media* distills the heaphone world down to its essence and finds out what audio professionals really need to know before buying their next pair of cans.

The first step towards choosing a pair is to identify the design features that best suit your needs. In an attempt to narrow any prospective search, we consulted with Sennheiser's Axel Grell, and Audio-Technica's Logan Helps to gain a balanced expert opinion on a few common considerations.

Closed Back Or Open Back?

Open backed headphones allow acoustical energy to leave the system through the back of each earpiece, which means less resonance and better sound quality than a closed system. Closed back headphones use materials to dampen that energy, which adds extra weight and impacts the nature of the sound.

Open back headphones can also be less tiring for your ears, so are worth considering if you plan to use them for long periods. For these reasons, open back headphones are more commonly used for high end studio mixing.

The disadvantage of open back headphones is the lack of isolation. You can hear whatever is happening around you, and others will hear whatever you're listening to. A closed system typically provides isolation of around 30-40 dB.

Conclusion: Open back for long periods where interference isn't a concern, closed back if you need to compete with background noise.

Circumaural Or Supra-Aural?

Circumaural headphones have large ear pads with an elliptical cushion that circles the ear. Supra-aural headphones (like the ones that came bundled with personal stereos in the 80s) sit on top of your ears.

Circumaural headphones should be more comfortable for extensive use, as the elliptical cushions contact each side of your head to remove pressure from your ears. These cushions can also provide extra isolation.

Supra-aural headphones can be more convenient for location sound as they tend to be significantly smaller. It is also possible to play sounds more loudly through supra-aurals, as the acoustical volume being moved is smaller, resulting in higher sound pressure levels for the same amount of energy.

Conclusion: Circumaural if you intend to use them for long periods; supra-aural if portability is a major concern.

Heavy Or Lightweight?

Our experts agreed that lightweight headphones were more comfortable, and therefore more desirable than heavy ones. Crucially, lower weight results in less pressure being applied to the user's head and ears. They also agreed that the overall weight had no bearing on sound quality. The only exception was in the magnet system, which has to be the right size to provide sufficient power.

Conclusion: Lightweight.

"Closed back headphones use materials to dampen that energy, which adds extra weight and impacts the nature of the sound. "

Which Materials?

Ideal materials for headphones are lightweight and non-resonant. Commonly used materials include magnesium, aluminium, and high tech plastics.

For constructive parts, Axel Grell prefers a good plastic material. "Good means not a cheap ABS or something like that," he explains. "The better choice, from an acoustic point of view, is to use plastic materials that have an inner damping." When metal parts are used, extra material is necessary to dampen resonance. "Plastic parts are more expensive," he adds. "It takes really high tech plastic to get the same stability of the part as there would be with magnesium."

Conclusion: High tech plastic if you want lightweight headphones that sound good, metal if you like shiny things.

"Crucially, lower weight results in less pressure being applied to the user's head and ears. They also agreed that the overall weight had no bearing on sound quality."

Transducers

By far the most commonly used transducer design is the dynamic, moving-coil, driver. These drivers use a stationary magnet and a wire voice coil to move a stiff diaphragm. However, within this design paradigm, several manufacturers have introduced their own design principles and proprietary elements.

Logan Helps describes transducers as "the envelope that's continually being pushed." Axel Grell tells us that "there are different design principles, but they are not so very different."

Axel is in contact from time to time with colleagues at Beyerdynamic and AKG. "We have different philosophies, but we agree that the driver is the most important thing," he explains. "We've all spent a lot of money on computer simulation models to improve the diaphragm, with different results."

Conclusion: You get what you pay for.

Coping With Marketing

As we all know from TV shampoo adverts, marketing places particular emphasis on certain keywords. In the case of headphones, these tend to (justifiably) revolve around transducer design; 'computer optimised transducers', 'patented phase technology', 'optimised magnet systems', etc. While these things are all great, they don't tell us much other than that we should go out and buy them. The quality of any given headphone is certainly influenced by these things, but it also equally comes down to a multitude of less sexy factors that don't lend themselves as well to buzzwords. Factors like the quality of the wire in the voice coil, and the kind of glue that's used to attach the diaphragm. These kinds of details are less readily available, but will make a noticeable difference to sound reproduction.

Conclusion: We hope that this guide will help to narrow your search. However, the best way to make a final decision is also the most obvious, listen to lots of different sets and see for yourself.

HARMAN's AKG Professional Headphone Line: Sound Perfected

HARMAN's AKG line of professional headphones – featuring the K702 and K271 – covers the full spectrum of professional audio environments from the studio to the broadcast booth.

A leader in professional-grade headphones solutions covering the international market, HARMAN's AKG showcases its 65 years of quality and reliability through the K702 reference and K271 MKII studio headphones. Built specifically to cater to multiple industries, AKG ensures the correct fit, sound, and overall comfort in every headphone's research, design, and manufacturing phases.

Comfort, Quality and Reliability

Whether tasked with mixing, mastering, or monitoring, AKG's K702 reference headphones offer an open back, comfortable physical feel for the engineer, with extremely accurate dynamic response.

K702 and K271 MKII have been used in production, mixing and studio applications around the globe.

K702's revolutionary flat-wire voice coils and Varimotion™ two-layer diaphragm, with an open design and high performance cables complete the multi-purpose headphones, underscoring the attention to detail AKG continues to offer the end user.

K271 MKII is a professional Hi-Fi studio headphone with a circumaural design for extreme comfort and a closed back for maximum ambient noise isolation. XXL transducers provide a smooth, clean and very rich sound for the studio. K271 MKII's auto mute function automatically disables the sound emanating from the earpieces as soon as the headphones are taken off.

"It's about quality, comfort, and reliability when engineers and producers are sitting in studios and booths for extended periods of time. Ensuring their headpiece is ideally matched to the type of project and that it is ergonomically fitting are the quality features AKG is proud to demonstrate through our multiple lines of headphones," stated Alfred Reinprecht, VP, Marketing and Product Development, AKG. "K702 and K271 MKII are workhorses in the industry and AKG is proud to play such a large role in the development of the perfect sound."

Expand Your Perception

The newly introduced Perception Headphone series by AKG expands the widely used Perception Microphone Series. Three new headphone models, the K44 Perception, K77 Perception, and K99 Perception deliver AKG sound quality, a great design, and comfort level at an affordable price.

The over-ear, semi-closed design of the K44 Perception provides a powerful low end and clean highs for an excellent sound, ranging from project studios to home recording. The K77 Perception is an over-ear, semi-closed headphone with powerful and convincing sound at an amazing value – ready to use for home or project studios.

K99's high-performance, over-ear, semi-open headphones combine excellent sound quality with an astounding price-to-performance ratio. Its large, 40mm speakers provide a natural, uncoloured sound, ideal for the studio.

HARMAN (www.harman.com) designs, manufactures and markets a wide range of audio and infotainment solutions for the automotive, consumer and professional markets – supported by 15 leading brands, including AKG, Harman Kardon, Infinity, JBL, Lexicon, and Mark Levinson. The company is admired by audiophiles across multiple generations, and supports leading professional entertainers and the venues where they perform. More than 25 million automobiles on the road today are equipped with HARMAN audio and infotainment systems. HARMAN has a workforce of about 13,000 people across the Americas, Europe and Asia, and reported net sales of $4.2 billion for twelve months ending December 31, 2011.

HARMAN's AKG Perception Headphones Series expands on the already successful Perception Microphone Series with powerful, clear sound for accurate listening experiences in the studio.

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AKG's new Perception Headphone series K44, K77, K99.

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Headphones for Educated Ears

The KNS Series of Headphones from KRK

At KRK, our focus is to develop studio solutions to help you create a great mix. KRK monitors and subwoofers are legendary. The ERGO room analysis and correction system is revolutionary. Now you can enjoy the same KRK engineering and innovation when using headphones. The KNS series are designed to provide what KRK has been delivering for 25 years: sonic accuracy, transparency, and consistency. And, with KRK you are assured that what you hear is true, whether the source is on the console or on your head!

KRK Headphones provide a precise listening experience that takes you from personal studio to commercial studio to on-the-go track evaluations – and they allow you to evaluate and enjoy your music with the consistent voicing philosophy and honest reproduction top producers, studio musicians, performers, and engineers have come to trust. KRK headphones provide incredibly natural frequency response that gives you a reference standard unaffected by your location. Day or night. Studio or home. Without disturbing others. Without compromising your tracks. Whether you are listening to some tracks, or tracking your next recording, the KNS series gives you the famous KRK sound in an extraordinarily comfortable closed-back around-the-ear design with highly isolated surround pads. Having ‘One Voice’ that consistently gives you accurate reproduction of your music or mix will help you achieve just what the artist intended – especially when the artist is you.

“Expect excellent isolation from the KNS 6400 closed-back earcups for superb listening privacy in any setting and zero leakage into the mic during recording or vocal work. Highly recommended, well-priced headphone for recordists, mixers, and personal monitoring of all music genres. The KNS-8400’s offer nuanced tonal balance and clear timbral transparency at all frequencies. Low-end bass response is robust and full but with controlled impact while the uppermost highs remain present and brilliant without glare or screech.”
Headphone.com

“The lack of high-end hype is appreciated for long or loud tracking sessions, and the bottom end is slightly plump without being too ‘poofy’ or having ‘one note bass’ syndrome. Their clarity, isolation, low weight, fold-ability, and comfortable ear pads make an ideal headphone experience.”
Pro Audio Review

“For people who feel that headphones isolate the two sides of the stereo image unrealistically, the KRKs will be something of a revelation. Both phones are incredibly light – 7.4 and eight ounces – and this light weight greatly extended the comfortable listening period. These headphones provide a noticeably different listening and soundstaging experience than other headphones in their class, one that’s likely to win over musicians from some other headphones costing much more.”
Recording Magazine

“The first thing I want to know is whether the low frequencies are there. Does it feel like the Expose monitors? And it totally does, the comfort is incredible. They are lightweight – not these big, old heavy headphones that you feel like you want to take off after wearing them for five minutes. Now when I take my mixes home or when I’m travelling, I can plug my KRK headphones into my laptop and feel like I’m still in the studio. That’s important when you’re making hits for the radio; you have to be spot on.”
Rodney “Darkchild” Jerkins, Producer (Lady Gaga, Beyoncé, Britney Spears, Mary J. Blige)

“When its past 10pm and the kids are sleeping and you need to get this one more mix finished, and you have to change from your speakers to your headphones, you’re not losing anything. In a studio situation you’re wearing headphones for 12 hours, 14 hours, 16 hours. They’ve got to be comfortable. They’ve got to be closed back because you’re going to record with them. They’ve got to have a long cable with a volume control on the cable that’s convenient. These have them. That’s great. A pair of headphones that gives you a really honest representation of what’s going on, they can be invaluable, and it’s probably the cheapest thing you’ll buy for your studio. Most headphones make you happy, these headphones might make you sad if your mixes aren’t good – and that’s what I want my clients to have, I don’t want them to be fooled into thinking their mixes are great!”
Stephen Marsh (Mastering Engineer)

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Sennheiser Monitoring Headphones – Innovation and Expertise Combined

After more than half a century of innovation, Sennheiser continues to push the boundaries of what headphone technology is capable of delivering.

For nearly 70 years, Sennheiser microphones and headphones have consistently offered the very best in audio performance. The company's products are trusted by professionals worldwide and are used on a daily basis on live stages, by DJs and in studios. The company delivers a wide range of closed-back monitor headphones and open audiophile headphones to cater to diverse monitoring requirements.

HD 25-1 II

The closed-back HD 25-1 II is probably the most widely used headphone from the Sennheiser range by both live sound engineers and DJs. Offering high attenuation of background noise, they perform exceptionally well in challenging environments – for example ENG, sound reinforcement, studio monitoring, and audio equipment testing – and are capable of delivering very high sound pressure levels. Their lightweight construction and comfortable design with a split headband means they are suitable for long periods of use, yet they are also extremely robust for coping with the rigours of touring life. Featuring a tough, detachable steel cable, neodymium ferrous magnet systems, lightweight aluminium/copper voice coils, and a rotatable capsule for one-ear listening, the HD 25-1 II has a 70Ω nominal impedance for universal compatibility.

HD 280 Pro and HD 380 Pro

A closed-back, circumaural headphone designed for professional monitoring, the HD 280 Pro offers an exceptional 32dB attenuation of external noise, making it particularly suitable for use in high-noise environments. The HD 380 Pro provides excellent passive attenuation of ambient noise and an extended frequency response of 8-27,000Hz, utilising Sennheiser's Eargonomic Acoustic Refinement (E.A.R.) design, which channels the audio signal directly into the user's ears. Both models provide accurate sound reproduction for demanding use, while the lightweight and secure-fit design offers a very comfortable, long-duration listening experience.

HD 25-SP II

The HD 25-SP II are closed-back, dynamic headphones for monitoring, recording, and outdoor applications. A lower-cost alternative to the HD 25-1 II, featuring a simpler headband and slightly different capsule design, several high-end features of the more expensive model are included, for example neodymium ferrous magnet systems, lightweight aluminium/copper voice coils, a tough, detachable OFC cable, high maximum sound pressure level, and a very lightweight and comfortable design.

HD 800

Incorporating Sennheiser's most advanced driver technology, the HD 800 open-back, circumaural dynamic stereo headphones redefine the standard of reference-level audio. The reference-grade audio performance is matched by a striking design. The ring-shaped transducer is encased by a precision material made of stainless steel, while the ear pads are handcrafted from a high-quality microfibre fabric that is extremely comfortable to wear and easy to maintain. Featuring a specially-designed, four-wire, high-performance cable with Teflon insulation, the HD 800 delivers the ultimate in both audio and aesthetic performance.

HD 700

These open, circumaural dynamic stereo headphones promise an outstanding soundstage with a warm and balanced audio reproduction. They feature specially-tuned, highly efficient drivers capable of delivering high sound pressure levels, an angled acoustic baffle, plus a detachable, symmetrical, silver-plated four-wire OFC copper cable. Ventilated magnet systems minimise air turbulence and thus intermodulation and harmonic distortion.

HD 650

The audiophile HD 650s were developed from the award-winning HD 600 and feature improved materials for even better sound reproduction. Key features include highly optimised magnet systems for minimum harmonic and intermodulation distortion, lightweight aluminium voice coils to ensure excellent transient response, and a specially developed damping element, made from fine acoustic metal mesh, which guarantees a precise damping over the entire diaphragm surface and ensures consistency in all climates.

HD 600

The ideal choice for professional engineers recording classical music, the HD 600s deliver exceptionally natural, spatial, and accurate sound, with an advanced diaphragm design that eliminates standing waves in the diaphragm material. Other features include computer-optimised neodymium ferrous magnet systems for optimum sensitivity, a wide dynamic range, and minimised harmonic and intermodulation distortion. Lightweight aluminium voice coils ensure excellent transient response, while open metal mesh earpiece covers result in an extremely transparent sound.

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First Choice For Professionals

Specialist In Headphones

Ultrasone, founded in 1991, is located close to the Alps in South Germany and specialises in headphones. Day-to-day commitment leads to explicit expert knowledge and makes Ultrasone one of the leading developers and manufacturers of headphones throughout the world. Constant development leads to high quality pro headphones equipped with the latest technologies and beneficial accessories.

Ultrasone's Technologies Are Unique

Ultrasone invented the inimitable S-Logic™ Natural Surround Sound and Ultra Low Emission technologies, thus integrating safer hearing aspects without neglecting the latest technologies. The consideration of all these aspects is fundamental for modern headphones.

S-Logic™ Technology

Unique? Yes! Revolutionary? Definitely! The patented S-Logic™ technology is described as 'Natural Surround Sound System'. No other digital surround system can compare with this standard. The sound of normal headphones will sound direct and even on both sides, while the S-Logic™ system pushes sound around your head. It appears as though you are listening to speakers metres away. Even at very low levels, this spacious sound allows you to hear and listen to each and every individual sound. And on top of that, the S-Logic™ technology does not require additional equipment!

How does S-Logic™ work?

S-Logic™ sends music around your head, not just into it, because this technology uses decentralised driver positioning. Did you know that you use and need the outer ear for your three-dimensional understanding to define the direction and distance of where a sound comes from? Instead of hitting the inner ear directly, with S-Logic™ the signals are reflected off the surface of the outer ear in different directions before entering the auditory canal, to create a natural three-dimensional sound. S-Logic™ is the only headphone system that includes your entire sense of hearing. S-Logic™ does not change your personal hearing, but it intensifies it for your individual needs and listening pleasure. S-Logic™ doesn't need artificial echo, digital sound processing, or cross over run time delay. You can hear the sound just the way the sound engineer has mastered it.

Ultrasone's ULE-Technology

Most headphone drivers produce low-frequency magnetic fields as they convert an electrical signal into the acoustical signal that we hear as music. Ultrasone has developed a special MU-Metal shielding that we call ULE (for Ultra Low Emissions) to reduce this radiation by up to 98 %, compared to conventional headphones. This technology has withstood the test of international review and is recommended by technical surveillance organisations. Ultrasone originally developed ULE-technology for professionals, since they spend half of their lives in headphones.

Safer Hearing

S-Logic™ allows at the same time a reduction of sound pressure levels at the eardrum by up to 40 % (3-4dB). This may reduce the risk of hearing damage while ensuring hours of fatigue-free listening.

Professional Sound Quality & Accessories

The highest sound quality is guaranteed due to high profile technologies and high-class materials. Naturally, Ultrasone headphones offer accessories desired by professionals to support day-to-day needs in the studio or on the road. The headphones are placed in a safe transportation box together with accessories such as extra detachable cable and extra earpads.

ULTRASONE
THE headphone company

Take a closer look at our website. The options are yours to explore. If you have any questions, please feel free to contact the Ultrasone team any time.

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Shure Professional Open Back Headphones SRH1440 and SRH1840 – designed for mastering and critical listening.

SRH440 SRH840 SRH940

SRH1440 SRH1840

Shure Professional Headphones for Recording, Mastering and Critical Listening

PROFESSIONAL SOUND FROM EAR TO EAR.

Shure Professional Headphones live by a simple rule: What goes in must come out. Designed to withstand the rigours of everyday use, they are an excellent choice for music professionals and music obsessives – for audiophile listening, critical reference monitoring and mastering. With the SRH1840 and SRH1440, Shure introduces two new Professional Open Back Headphones – the choice for professional engineers who edit, mix and master recordings.

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